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Introduction

Purpose

This publication can help you design your letter-size mailpieces for improved service and postage savings. It can be used by printers, graphic artists, forms designers, envelope manufacturers, and computer programmers to verify technical specifications.

However, this publication can be used by anyone who wants to reduce mailing costs while benefiting from a faster and more accurate method of mail processing.

Although the design standards identified in this publication are required for mailers seeking one of the many postage discounts offered by the Postal Service, all mailers should follow these standards. By doing so, you can help us increase the volume of automation-compatible mail and reduce overall postal mail processing costs.

Revisions

This revision replaces the August 1992 edition of Publication 25, *Designing Business Letter Mail.* The updated information and layout for this new edition should make it easier to produce mailpieces that are automation compatible for related benefits. In most cases, letter mail designed according to specifications in the August 1992 edition of Publication 25 will be compatible with current postal automation standards.

This revision includes decimal equivalents to design specifications previously identified only by fractional inches. For example, 1/8 inch is now written "1/8 inch (0.125 inch)." The addition of decimal equivalents should aid customers who use software for greater precision in creating their mailpiece designs.

Throughout this publication, terms such as letter and letter mail mean all envelopes, folded self-mailers, booklets, and cards that are within the range of letter-size dimensions defined in chapter 3 and in *Domestic Mail Manual* C810.

1 Automation Benefits

Why Automation?

Since the early 1980s, sorting and distributing mail have changed from manual and mechanized methods to mostly automated methods. With the costs of processing mail steadily increasing, full use of automation is the logical choice for improving productivity and reducing expenses. Sorting 1,000 letters through our automated system, for example, saves up to $36 compared with processing the same mail by older, less efficient methods.

Our automated system is made up of equipment that processes only "machinable" and "readable" mail as defined as follows:

- Machinable means that the mail is of the right size and shape and made of the correct material for transporting at high speeds through our automated processing system.
- Readable means that the mail contains a machine-printed address or POSTNET (POSTal Numeric Encoding Technique) barcode for scanning and sorting by our optical character readers or barcode sorters.

If you have a typewriter, computer printer, or other means of machine printing, you can produce letter mail for automated processing. And if you mail 250 or more letter-size pieces at any one time (200 pieces for bulk third-class rates), your mail could be eligible to receive postage discounts.

Automated Processing System

Advanced Facer-Canceler

Our advanced facer-canceler machines face (orient) mail in the right direction, cancel (postmark) postage stamps, and separate machine-addressed letters for processing on optical character readers. These machines also read facing identification mark (FIM) patterns on business reply mail and courtesy reply mail, separating that mail for further automated processing.

Multiline Optical Character Readers

Our multiline optical character readers (MLOCRs) interpret machine-printed addresses on letter mail, print a POSTNET barcode in the lower right corner of the mailpiece, and perform an initial sort. MLOCRs can read, barcode, and sort mail at 10 pieces per second. (In this publication, OCR is synonymous with MLOCR.)

Mail Processing Barcode Sorters

Our mail processing barcode sorters (MPBCSs) read POSTNET barcodes on letter mail and sort it accordingly. MPBCS processing, which equals the speed of MLOCR processing, is extremely accurate and relatively inexpensive.

Because automated mail processing is based on sorting mail by barcodes, the MPBCS has become the workhorse of our system. Mail barcoded by postal customers bypasses MLOCRs and other initial sorting operations for direct MPBCS processing. (In this publication, BCS is synonymous with MPBCS.)

Remote Barcoding System

Our Remote Barcoding System (RBCS) provides a way to barcode letter mail that is neither barcoded by postal customers nor printed with an address that is readable by MLOCRs. The RBCS increases the mail volume entering the barcoded mailstream, improving efficiency by allowing this mail to bypass mechanized or manual processing operations.

But, because the RBCS is our most expensive method of barcoding, we want to minimize the amount of mail processed through this system. Additionally, this method still requires, for postal processing, that the customer maintain a barcode clear zone (an area in the lower right corner of the mailpiece).

Delivery Barcode Sorters and Carrier Sequence Barcode Sorters

Our delivery barcode sorters (DBCSs) and carrier sequence barcode sorters (CSBCSs) finalize the sortation of letter mail into delivery sequence order (DPS) or to the sector/segment level by using a two-pass sortation process.

Delivery point sequencing places the mail in the order of carrier delivery by using the 11-digit delivery point barcode (DPBC). This sortation significantly reduces the time that carriers take inside the post office to case (sort) the mail before delivery. The mail can go directly from the DBCS into trays that are loaded into the carrier's vehicle for delivery to the customer.

The DBCS — the fastest barcode sorter purchased by the Postal Service to date — can process 34,000 pieces an hour. Delivery point sequence will be used in all offices except for those with only a small combined number of carrier routes and box sections.

Postage Discounts

If you plan to benefit from an automation discount, you will find this publication and Notice 67, *Automation Template,* helpful for designing letter mail that meets related requirements in the *Domestic Mail Manual,* including all mailing standards for automation-compatible rate discounts. Publication 25, however, does not supersede any requirement in the *Domestic Mail Manual.*

The Postal Service offers a variety of postage discounts for correctly prepared automation-compatible mailpieces. You can qualify for automation rates for delivery point barcoded mailpieces submitted according to postal standards. Account representatives, postal business center personnel, and business mail entry unit personnel can answer your questions about these discounts.

Barcoding Specifications

When reviewing specifications in the *Domestic Mail Manual* for automation-compatible mailpieces, keep in mind that letter mail barcoded to meet the requirements of *Domestic Mail Manual* C840, Barcoded Mailpieces, need not satisfy the design specifications of *Domestic Mail Manual* C830, OCR Processing Standards.

Because processing is done directly on Postal Service barcode sorters, it is unnecessary that a 100 percent barcoded letter mailing — barcoded according to postal standards — meet the requirements for optical character reader (OCR) compatibility.

However, if your barcoded mailpieces contain address block barcoding, addressed inserts, or nonbarcoded pieces, those pieces must meet all OCR readability requirements. See chapter 4 and *Domestic Mail Manual* C830 for those requirements.

The Postal Service is committed to its automation program for mail processing. In the Classification Reform case that the Postal Service filed in March 1995 with the Postal Rate Commission, mailings of letter-size mail receiving a barcode discount would require the customer to prebarcode 100 percent of the pieces in an automation-rate mailing with a delivery point barcode. Nonbarcoded pieces would enter a separate mailstream or be part of a nonbarcoded presort mailing. Currently, postal standards allow up to 15 percent of the pieces in a barcoded mailing to contain no barcode. Mailers should take steps now to ensure that their mailings will meet the 100 percent barcoding requirement when implemented in 1996.

Prebarcoding your mail is also important from a perspective of mailpiece design. Because there are no OCR readability requirements, you have more latitude in selecting colors, type styles, and the location for address printing if you barcode your mail.

Financial Savings

And that brings us to the main reason for seeking your voluntary support — costs. Automated processing of mail can reduce postal expenses more than any other effort. The more mail we can process by automation methods, the more money you can save.

The use of automation means holding the line on the amount and frequency of rate increases — something that we all want. So, give us your automation-compatible mail, and we will give you the best service at the lowest price.

Assistance

Our mailpiece design analysts can help you with the guidelines in this publication. Mailpiece design analysts are postal personnel who replaced automation readability specialists. The automation readability specialists helped determine the machinability and readability of prepared mailpieces.

The mailpiece design analysts take a more proactive approach, helping you to design the mailpiece from its inception. These analysts have a thorough understanding of all postal automated processing equipment and compatible mailpiece design standards.

Besides providing mailpiece analysis and design assistance locally, these analysts can, when appropriate, arrange to have your mail further tested and analyzed by Postal Service Engineering in Merrifield, VA.

Account representatives and postal business center personnel can also help you with these guidelines and answer your questions about postage discounts for automation-compatible mail. For more information or assistance, telephone or visit your nearest postal business center (see appendix H for the address and telephone number of the center serving your area).

Automation Templates and Gauges

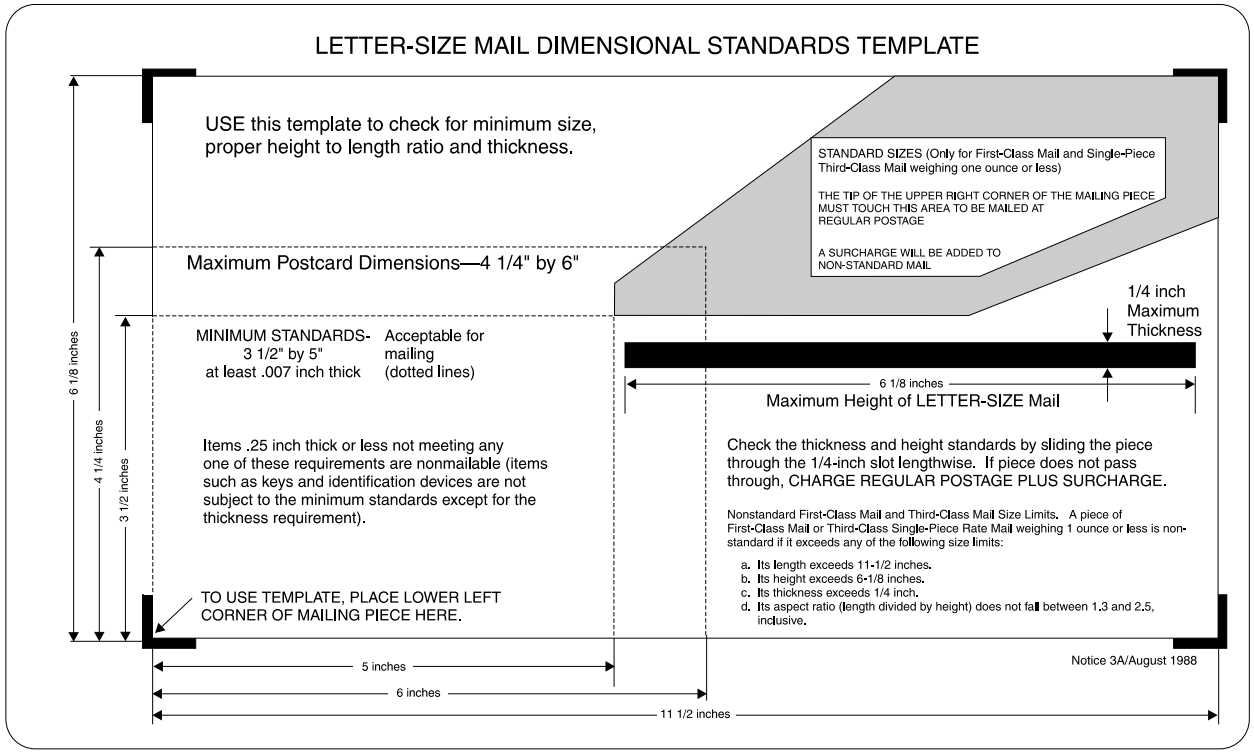
Purpose

To measure mailpieces for determining automation compatibility and readability, we currently use the templates and gauges described in the following sections. You can obtain these aids from your mailpiece design analyst, account representative, or postal business center.

Notice 3A, *Letter-Size Mail Dimensional Standards Template*

Use this template to determine whether a mailpiece meets the size, shape, and thickness requirements for automated processing (see exhibit 1-1). Pieces are considered nonstandard and not suitable for automated processing if they do not meet the standards in chapter 3.

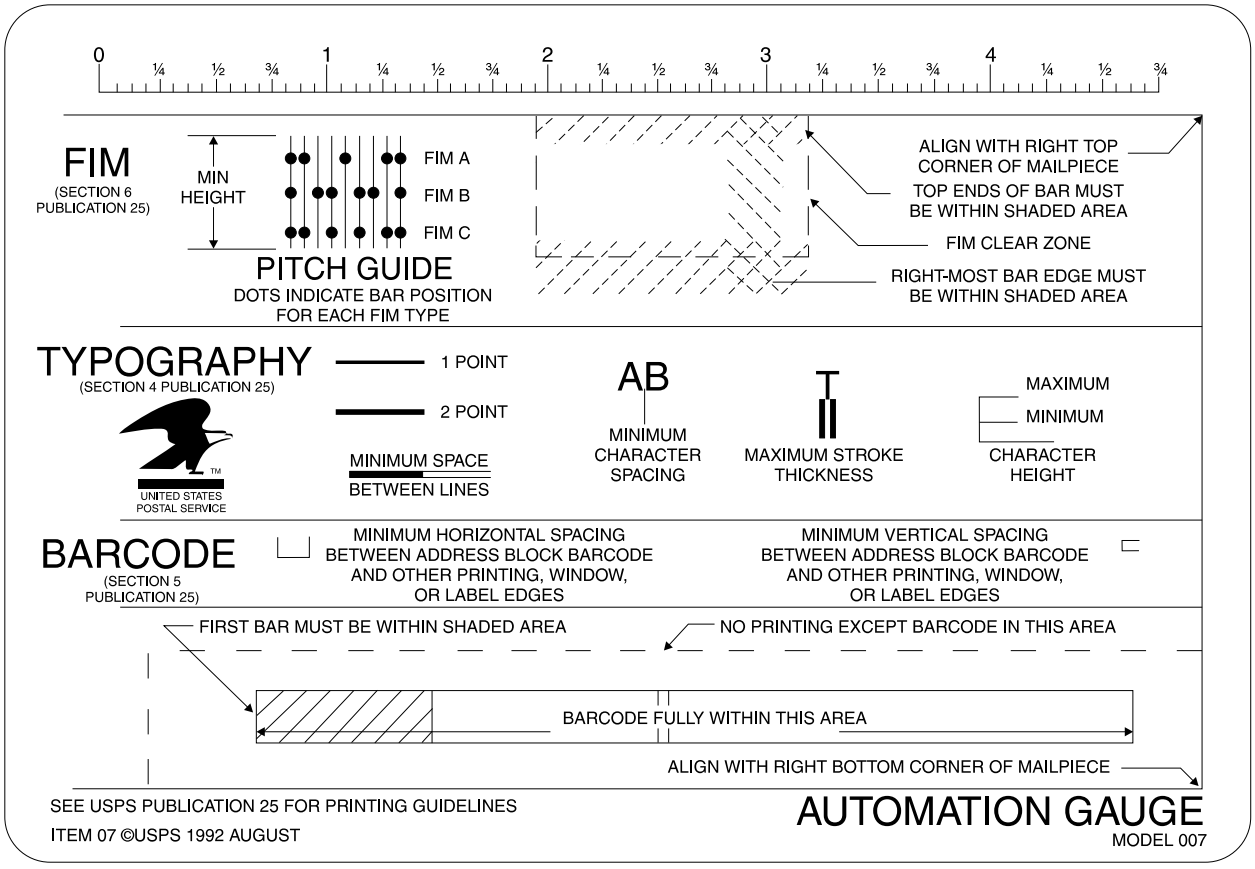
Exhibit 1-1
***Notice 3A,* Letter-Size Mail Dimensional Standards Template**
(not actual size)



Automation Gauge

Use this pocket-size clear plastic gauge to determine proper spacing for barcodes in the address block or lower right corner, proper placement and bar positioning of facing identification mark (FIM) patterns, and character height and spacing. Model 007 is the current version (see exhibit 1-2).

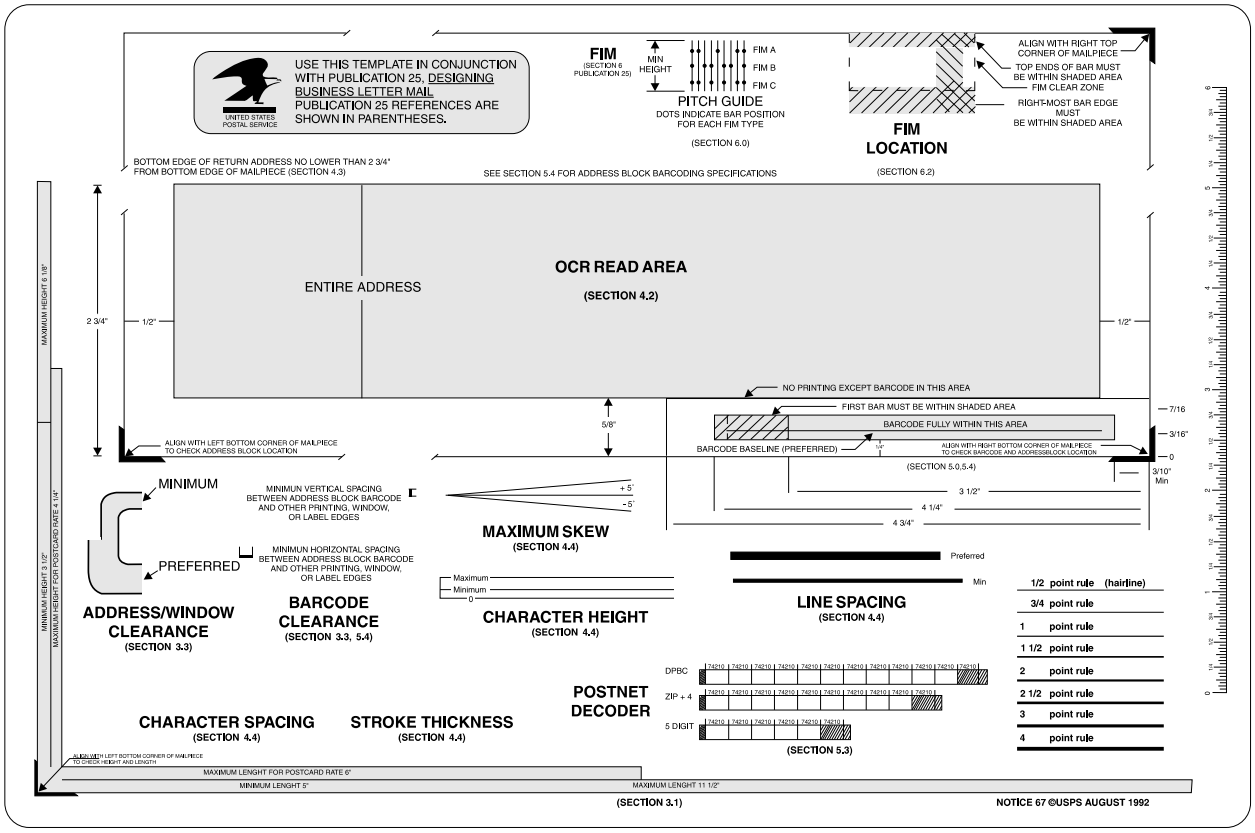
Exhibit 1-2
Automation Gauge (Model 007)
(not actual size)



Notice 67, *Automation Template*

Use this larger size template (see exhibit 1-3) to obtain more information on automation readability parameters. Of clear plastic, this template simplifies the task of determining whether your mail is machinable, OCR-readable, or printed with the correct FIM pattern.

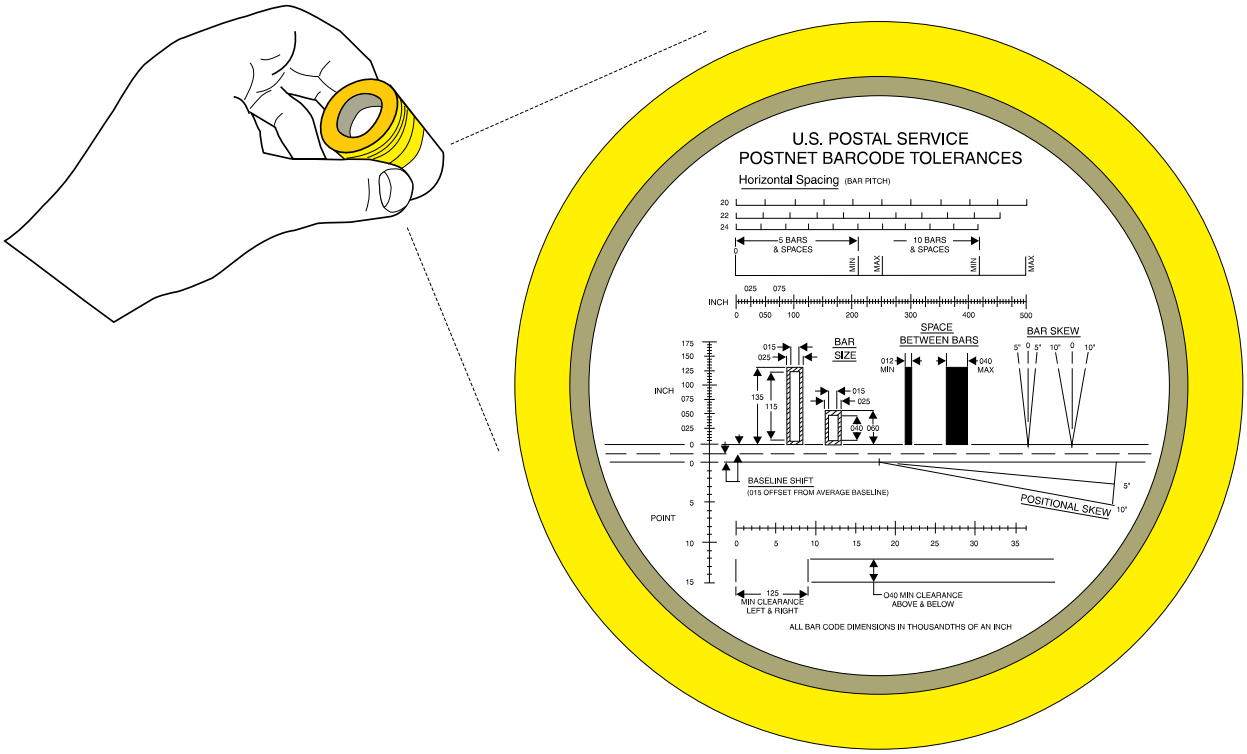
Exhibit 1-3
***Notice 67,* Automation Template**
(not actual size)



POSTNET Code Eyepiece With Reticle

Use this photo-engraved optical instrument to determine whether a barcode meets POSTNET specifications (see exhibit 1-4). This eyepiece is used by placing it on the bar or barcode to be examined and viewing the positioning of each bar.

Exhibit 1-4
POSTNET Code Eyepiece With Reticle
(not actual size)



Other References

Mailing Regulations

You can order copies of the two Postal Service manuals containing regulations for domestic and international mail — the *Domestic Mail Manual* and the *International Mail Manual* — from the U.S. Government Printing Office by writing to the following address for subscription prices:

NEW ORDERS
SUPERINTENDENT OF DOCUMENTS
US GOVERNMENT PRINTING OFFICE
PO BOX 371954
PITTSBURGH PA 15250-7954

Telephone: (202) 783-3238

You can also order electronic versions of these two manuals from the following vendors licensed by the Postal Service:

GLOBAL VILLAGE PUBLISHING INC
1101 KING ST STE 190
ALEXANDRIA VA 22314-2944

Telephone: 1 (800) 394-4874

WINDOW BOOK INC
300 FRANKLIN ST
CAMBRIDGE MA 02139-3708

Telephone: 1 (800) 370-2410

Related Publications

Ask your postal business center for these other useful publications on automation:

- Publication 28, *Postal Addressing Standards.* This comprehensive guide explains how to address mail for optimal service.
- Publication 63, *Designing Flat Mail.* This guide shows how to design flat-size mailpieces for improved service and postage discounts.
- Publication 221, *Addressing for Success.* This concise pamphlet shows how to prepare daily office mail for automated processing.
- Publication 353, *Designing Reply Mail.* This guide shows how to prepare reply mail for faster, more accurate responses.

2 OCR and Barcode Reading

Overview

Because the guidelines in this publication are based on the operational characteristics of our automated mail processing equipment — optical character readers (OCRs) and barcode sorters (BCSs) — it is helpful to understand how this equipment works.

Multiline Optical Character Readers

Our multiline optical character readers (MLOCRs) scan machine-printed address information on letter mail, determine the correct ZIP+4 code or delivery point code information, convert that information into a POSTNET barcode, then print the barcode onto the mailpiece.

To read the delivery address, a MLOCR must first be able to find it. This is the reason for establishing an OCR read area on letter mail. The read area is where the MLOCR's optical scanner looks for the address information.

After finding the address, the MLOCR must be able to see all address elements clearly. This is why the print quality of the address is important and why dark ink on a light-colored background is necessary.

To interpret the address, the MLOCR must separate the information by characters, words, and lines. This is why proper print separation (spacing between characters and lines) is also important. If address characters are slanted too much or printed too close to one another, the MLOCR cannot determine where one character stops and the next begins.

After reading the address, the MLOCR searches its files for the same address. Once found, the MLOCR prints the delivery point barcode assigned to that address in the lower right corner of the mailpiece (see chapter 5 for a description of the delivery point barcode).

The MLOCR then does an initial sort of the mailpiece, based on the barcode that it just printed. From that point on, the mail is sorted by reading and interpreting the barcodes on high-speed barcode sorters, from origin to the letter carriers who will deliver the mail.

Mail Processing Barcode Sorters

Unlike MLOCRs, our mail processing barcode sorters (MPBCSs) ignore all alpha and numeric printing and read only POSTNET barcodes. The wide area scanners on our MPBCSs can read barcodes printed in the address area as well as in the conventional position in the lower right corner.

This innovation makes it easier for you to participate in postal prebarcoding programs, which offer the largest automation-related postage discounts. Besides the need for machinable letter mail, all that is necessary for successful MPBCS processing is an accurate, readable barcode printed within the barcode read area.

Barcoding Software and Equipment

Equipment and software that print the POSTNET barcode as part of the delivery address or in the conventional lower right corner are available from many vendors at prices soon repaid by postage savings. Prices vary from moderate to somewhat expensive, depending on the various features.

The systems, printers, and software offered by these vendors are certified by the Postal Service as having the ability to produce POSTNET barcodes that satisfy the dimensional specifications in chapter 5. You can obtain a list of vendors offering hardware and software for POSTNET barcoding from postal account representatives or postal business centers.

When purchasing any barcoding software or equipment, make certain that the product bears the Postal Service certification seal if you plan to claim any postage discounts.

3 Automation Design Standards

Mailpiece Dimensions

Minimum and Maximum Sizes

Letter mail processed on our automated equipment moves at high speeds through belts and rollers that take the mail past the optical scanner and to the appropriate bin or stacker after sortation.

Although our optical character readers (OCRs) and barcode sorters (BCSs) can sort a variety of letter sizes, the mailpieces must be rectangular and within the minimum and maximum dimensions shown in exhibit 3-1. Otherwise, the pieces tend to tumble forward and jam the equipment during processing.

Letter mail less than 10 1/2 inches (10.500 inches) long processes better than longer size letter mail. The OCR reads address information that is located within 1/2 inch (0.500 inch) of the right edge and left edge of the letter mail.

Exhibit 3-1
Letter Mail Dimensions

Dimension	Minimum	Maximum
Height	3 1/2" (3.500")	6 1/8" (6.125")
Length	5"	11 1/2" (11.500")
Thickness	0.007"	1/4" (0.250")

These standards also apply to letter-size mail:

- Letter-size mail length is the dimension that parallels the lines of the delivery address. The top and bottom of the mailpiece also parallel the delivery address lines.
- Letter-size mail must be at least 0.009 inch thick if it is more than 4 1/4 inches (4.250 inches) high or more than 6 inches long or if the mail exceeds both these dimensions.

- Letter-size mail more than 10 1/2 inches (10.500 inches) long should have the address within 9 3/4 inches (9.750 inches) from the right edge of the mailpiece, with at least a 1/2-inch (0.500-inch) clear vertical space (margin) on each side (see exhibit 4-7).
- First-Class letter-size cards — cards more than 4 1/4 inches (4.250 inches) high or 6 inches long — are charged at the letter-size rates.

Nonmailable Pieces

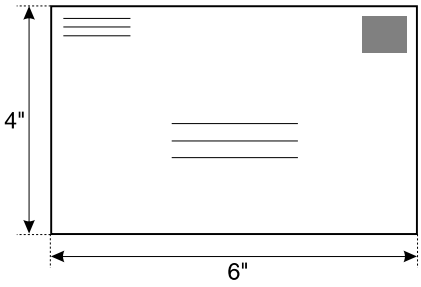
All pieces (letters and cards) not meeting the minimum size standards in exhibit 3-1 are nonmailable.

Nonstandard Size

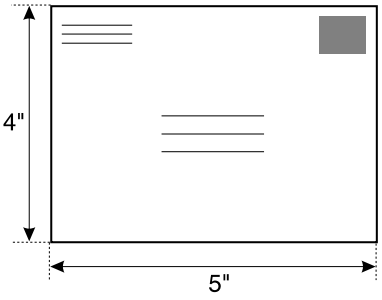
Letter-size First-Class Mail or single-piece-rate third-class mail weighing 1 ounce or less is nonstandard and subject to the applicable surcharge if its thickness exceeds 1/4 inch or if, based on the placement (orientation) of the address, its length exceeds 11 1/2 inches, its height exceeds 6 1/8 inches, or its length divided by its height — the aspect ratio — is less than 1.3 or more than 2.5 (see exhibit 3-2).

Exhibit 3-2
Aspect Ratio
(not drawn to scale)

Machinable Aspect Ratio: 1.5



Nonmachinable Aspect Ratio: 1.25



Mailpiece Materials and Construction

Paper Weight

The following recommendations for paper and card stock refer to the minimum basis weight of the materials. Basis weight is defined as the weight (in pounds) of a ream (500 sheets) cut to a standard size for that grade.

For example, envelopes should be constructed of paper weighing at least 16 pounds (minimum basis weight). The specific grade of 16-pound paper recommended for envelopes is defined as 500 sheets measuring 17 inches by 22 inches (17 inches by 22 inches by 500 sheets).

Recycled paper and card stock are compatible with postal automation if the materials satisfy the following recommendations and the guidelines in chapters 4, 5, and 6.

Envelopes

Envelopes and other types of letter-size pieces closed on all four edges must be constructed of paper with a minimum basis weight of 16 pounds (17 inches by 22 inches by 500 sheets). For business reply mail envelopes, the minimum basis weight is 20 pounds (see *Domestic Mail Manual* S922).

Folded Self-Mailers

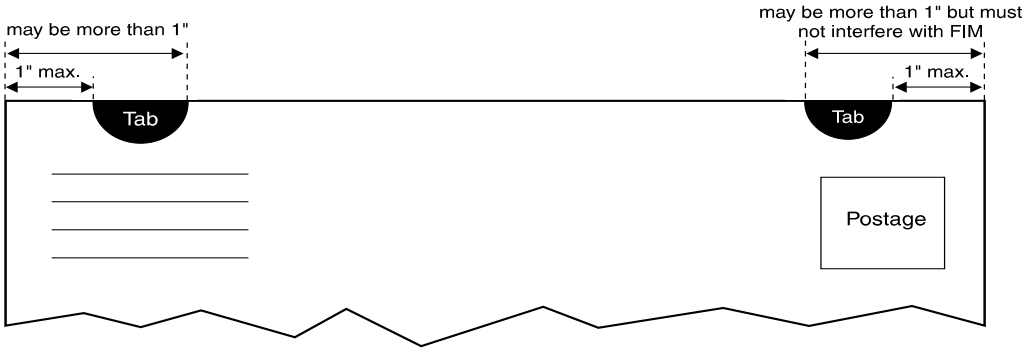
The required minimum basis weight of paper for folded self-mailers (mailpieces designed without envelopes), prepared for either ZIP+4 or barcoded rates, varies with the construction of the mailpieces as follows:

- For a single folded sheet — sealed with one tab or glue spot — a minimum basis weight of 28 pounds (17 inches by 22 inches by 500 sheets) or 70 pounds (25 inches by 38 inches by 500 sheets).
- For two or more sheets — sealed with one tab or glue spot — a minimum basis weight of 24 pounds (17 inches by 22 inches by 500 sheets) or 60 pounds (25 inches by 38 inches by 500 sheets).
- For a single folded sheet or multiple sheets — sealed with two tabs or two glue spots — a minimum basis weight of 20 pounds (17 inches by 22 inches by 500 sheets).

Exhibit 3-3 shows the proper placement of tabs or glue spots on folded self-mailers. Tabs, wafer seals, tape, or glue may be used to seal folded self-mailers. Tabs and other seals placed at the top of folded self-mailers should be positioned so that they do not cover the return address or the postage information (stamps, meter imprints, or permit imprints).

Tabs and other seals placed in the barcode clear zone (see chapter 4) must be made of uncoated white or light-colored paper that satisfies the background reflectance specifications in chapter 5. These specifications ensure successful barcode printing and reading by our automated equipment. For optimal processing, the folded self-mailer should be constructed with the fold at the bottom and the tabs or glue spots at the top.

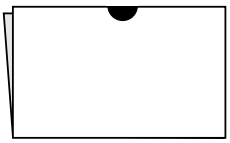
Exhibit 3-3
Folded Self-Mailers
(not drawn to scale)



Suggested Position of Tabs, Wafer Seals, and Glue Spots

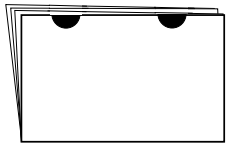
Envelope

Tabs/Glue	None (folded/ sealed edges)
Fold/Spine	N/A
Sheets	N/A
Basis Weight	16 lb.



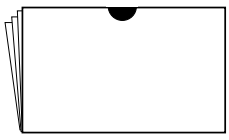
Double Card

Tabs/Glue	1 (middle)
Fold	Top or bottom
Sheets	Single
Basis Weight	75 lb.



Folded Self-Mailer

Tabs	2 (start ≤ 1 inch from edges)
Fold/Spine	Top or bottom
Sheets	Single sheet with multiple folds
Basis Weight	20 lb.

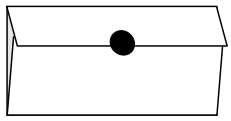


Folded Self-Mailer

Tabs	1 (middle)
Fold/Spine	Bottom
Sheets	Multiple
Basis Weight	24 lb.

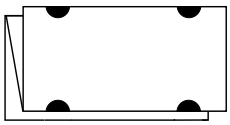
Booklet

Tabs	2 (start ≤ 1 inch from edges)
Fold/Spine	Bottom
Sheets	Multiple with cover
Basis Weight	20 lb. (cover only)



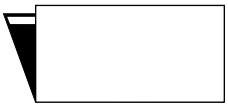
Invitation Fold

Tabs/Glue	1 (in center of overlap)
Fold/Spine	Top and bottom
Sheets	Multiple or single
Basis Weight	20 lb.



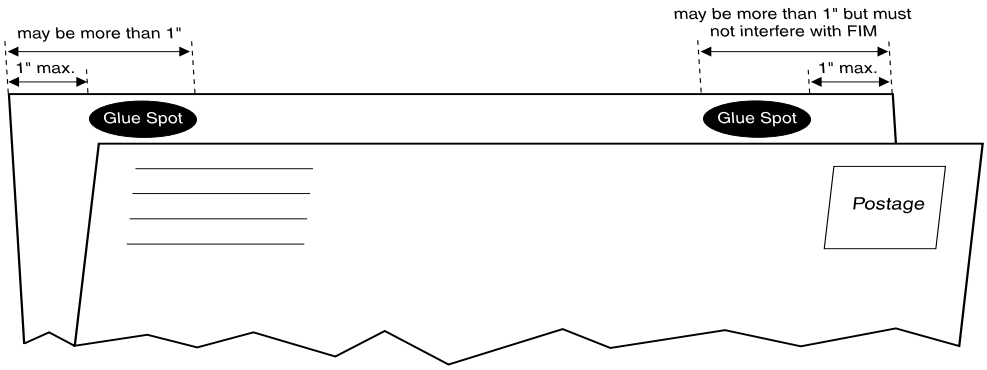
Accordion Fold

Tabs/Glue	4 (2 top and 2 bottom start ≤ 1 inch from edges)
Fold/Spine	Open edge top and bottom
Sheets	Multiple or single
Basis Weight	20 lb.



Continuous Gum Strip

Glue Strip	Top edge
Fold/Spine	Bottom
Sheets	Single
Basis Weight	20 lb.

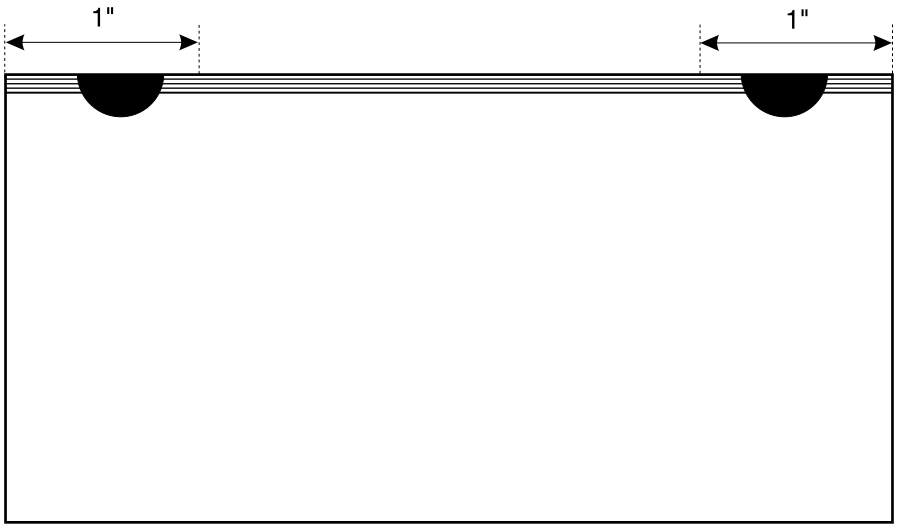


Booklets

The required minimum basis weight of paper for covers on booklet-type mailings is 20 pounds (17 inches by 22 inches by 500 sheets). See *Domestic Mail Manual* C810. Construction of booklets (see exhibit 3-4) must meet these requirements:

- The bound edge or spine must be at the bottom edge of the mailpiece, parallel to the lines of the delivery address.
- The top (open) edge of the mailpiece must be closed with at least two tabs. One tab must be placed within 1 inch of the left edge and the other tab must be placed within 1 inch of the right edge. Instead of tabs, wafer seals or tape may be used.

Exhibit 3-4
Booklet Construction
(not drawn to scale)



Cards

Thickness, stiffness, and tear strength are the most important machinability characteristics for cards. The minimum required basis weight for card stock is 75 pounds (25 inches by 38 inches by 500 sheets).

You should orient the paper grain in cards parallel to the long dimension of the card. Long-grain cards are less likely to jam postal automated equipment than are cards with the grain parallel to the short dimension of the card.

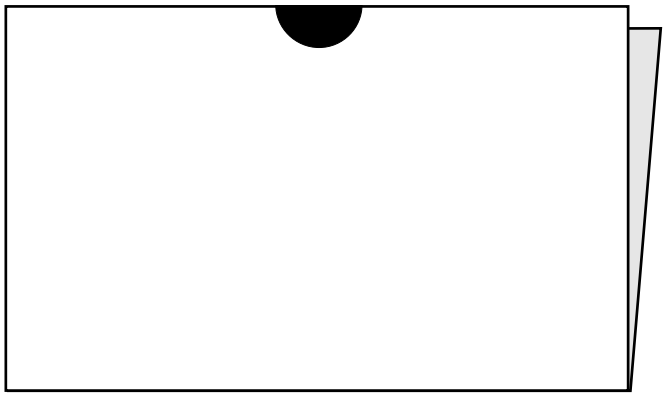
Cards larger than 4 1/4 inches (4.250 inches) by 6 inches should be produced from stock with a higher basis weight, using one of these recommended papers:

- 80-pound vellum bristol (22.500 inches by 28.500 inches by 500 sheets).
- 90-pound index (25.500 inches by 30.500 inches by 500 sheets).
- 120-pound offset (25 inches by 38 inches by 500 sheets).
- 100-pound tag (24 inches by 36 inches by 500 sheets).

Double Postcards

Folded double postcards must be secured with at least one tab, wafer seal, tape strip, or glue spot placed at the center of the open edge. The open edge may be at the top of the mailpiece (see exhibit 3-5) or the bottom.

Exhibit 3-5
Double Postcard



Incompatible Materials and Sealing Methods

Coverings

Certain materials are incompatible with postal automation because they cannot be transported at high speeds through mail processing equipment or they do not allow quality printing of a barcode on the mailpiece for optimal scanning. These materials include polywrap, shrinkwrap, spun-bonded olefin, and other plastic-like coverings. Certain types of coated papers should also be avoided if the coating is so glossy that it can prevent a postal-applied barcode from drying within 1 second. Consult a mailpiece design analyst about nonpaper coverings before you produce your mailpiece.

Dark Fibers and Patterns

Paper containing dark fibers or background patterns is not recommended because it can cause interference during optical character reader (OCR) and barcode sorter (BCS) processing. The dark patterns can be mistaken for part of the address or barcode information.

If you use such paper, make sure that the contrast ratio between the fibers (or pattern) and the background does not exceed 15 percent in the red and the green portions of the optical spectrum (see chapter 4).

Halftone Screens

If the material on which the delivery address is to appear is printed in a halftone screen, the halftone must contain at least 200 dots per inch or 100 lines per inch or it must be printed with at least a 20 percent screen (see *Domestic Mail Manual* C830).

Paper Types

Envelope paper and paper material on other letter-size mailpieces — such as folded self-mailers — must have sufficient opacity (enough density) to prevent any printing on the inside of the mailpieces from showing through in the optical character reader (OCR) read area or in the barcode clear zone (see chapter 4).

Avoid using textured paper — paper with other than a smooth surface — if the texture adversely affects print quality (that is, causes broken characters or smudged spaces). Because fluorescent paper can confuse the postage detector on postal facer-canceler machines, you should also avoid using such paper.

Closures

Because closures can jam equipment and damage mail during processing, avoid using clasps, staples, string, buttons, and similar protrusions for closing letter-size pieces. Similarly, the edges of letter pieces should not be notched, scalloped, or curved.

Window Envelopes and Inserts

Address/Window Clearance

To ensure successful automated processing, design your window envelopes and their inserts so that the entire address and postal barcode (when included) appear in the window area during the full movement of the insert.

For optical character reader (OCR) processing, at least 1/8-inch (0.125-inch) clearance — 1/4-inch (0.250-inch) clearance is preferred — must be maintained between the address and edges of the window when the insert is moved to its full limits inside the envelope (see exhibits 3-6 and 3-7).

OCRs need this clear space to distinguish the address from the edge of the window or shadows cast near the address by the edge of the window. Nonaddress information should not show in the window clearance area.

Exhibit 3-6
Address/Window Clearance
(not drawn to scale)

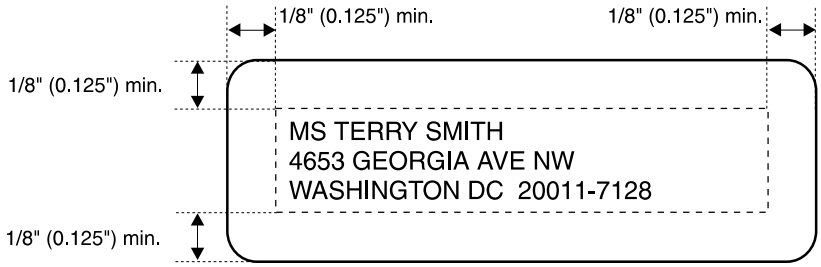
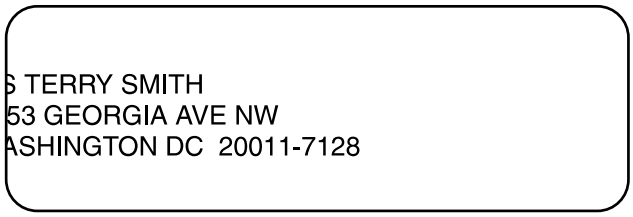


Exhibit 3-7
Excessive Address Insert Shift



Vertical Address Insert Shift Test

To test the vertical insert shift of the address within a window, do the following:

- Check that a clear space of at least 1/8 inch (0.125 inch) is maintained between the top of the recipient line in the address and the top edge of the window without tapping the mailpiece (see exhibit 3-6).

- Tap the mailpiece on a flat horizontal surface on its bottom edge to jog the insert as far down into the envelope as it can go.
- Check that a clear space of at least 1/8 inch (0.125 inch) is still maintained between the bottom of the post office, state, and ZIP Code line of the address and the bottom edge of the window.

Horizontal Address Insert Shift Test

To test the horizontal insert shift of the address and window, do the following:

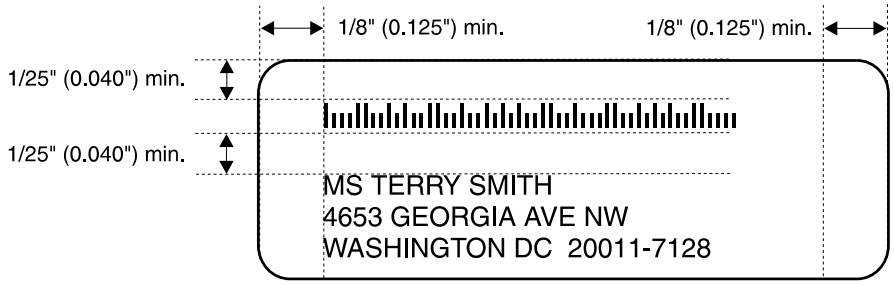
- Tap the mailpiece separately on its left and right edges to jog the insert as far to the left and right as it can go.
- As each side is tapped, check that a clear space of at least 1/8 inch (0.125 inch) is still maintained between the left and right edges of the address and the left and right window edges.

Barcode/Window Clearance

As with addresses, POSTNET barcodes printed on inserts — including POSTNET barcodes printed as the top or bottom line of the delivery address block — must maintain these minimum clearances (see exhibits 3-8 and 3-9):

- 1/8 inch (0.125 inch) from the left and right edges of the window opening when the insert is moved in those directions.
- 1/25 inch (0.040 inch) from the top and bottom edges of the window opening when the insert is moved in those directions. This 1/25-inch (0.040-inch) minimum clearance is also needed between the top and bottom of the barcode and any other printing.

Exhibit 3-8
Barcode/Window Clearance
(not drawn to scale)



Vertical Barcode Insert Shift Test

To test the vertical insert shift of the barcode and window, do the following:

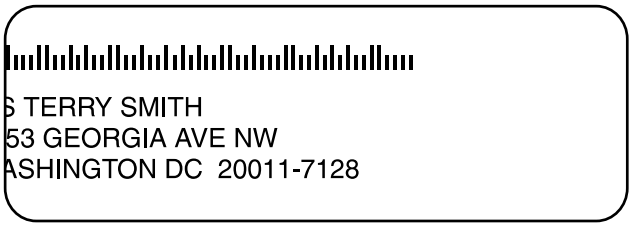
- Check that a clear space of at least $^{1}/_{25}$ inch (0.040 inch) is maintained between the top of the barcode and the top edge of the window without tapping the mailpiece (see exhibit 3.8).
- Tap the mailpiece on a flat horizontal surface on its bottom edge to jog the insert as far down into the envelope as it can go.
- Check that a clear space of at least $^{1}/_{25}$ inch (0.040 inch) is still maintained between the bottom of the barcode and the bottom edge of the window.

Horizontal Barcode Insert Shift Test

To test the horizontal insert shift of the barcode and window, do the following:

- Tap the mailpiece separately on its left and right edges to jog the insert as far to the left and right as it can go.
- As each side is tapped, check that a clear space of at least $^{1}/_{8}$ inch (0.125 inch) is still maintained between the left and right edges of the barcode and left and right window edges.

Exhibit 3-9
Excessive Barcode Insert Shift



Insert Material

Like envelope paper, insert material must have sufficient opacity to prevent any printing on the inside of the mailpiece from showing through in the OCR read area or in the barcode clear zone (see chapter 4).

Window Coverings

Open or covered windows may be used for addresses and address block barcodes. Material for covered windows must be clear or transparent (low-gloss materials are best) and securely attached on all edges. Cellophane, glassine (a recycled product), and polystyrene are acceptable materials.

All window coverings must be free of wrinkles, streaks, fogging, colors, and other conditions that can obscure the address or barcode during processing. All address and barcode information, as read through the window, must satisfy these minimum reflectance and contrast guidelines:

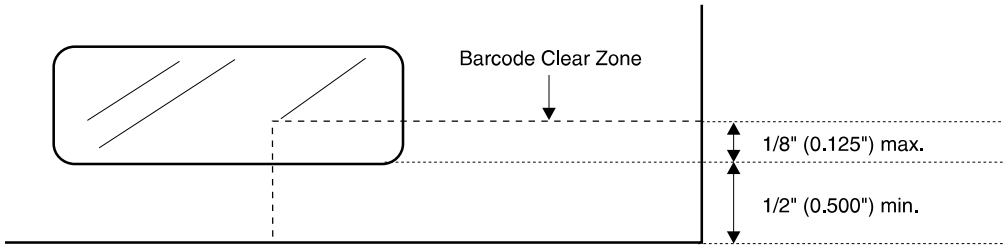
- A print contrast ratio (PCR) equal to or more than 40 percent in the red and the green portions of the optical spectrum is necessary for the optical character reader to recognize address information (see chapter 4).
- A print reflectance difference (PRD) equal to or more than 30 percent in the red and the green portions of the optical spectrum is necessary for the barcode sorter to recognize POSTNET barcodes (see chapter 5).

Because glassine is somewhat opaque (less transparent) compared with other window-covering material, addresses read through glassine can produce a slightly higher PCR of 45 percent. The minimum PRD for barcodes read through glassine is 30 percent — the same minimum required for other window-covering material.

Window Clear Space

Address windows should be no lower than 1/2 inch (0.500 inch) from the bottom edge of the envelope and may extend 1/8 inch (0.125 inch) into the barcode clear zone (see exhibit 3-10).

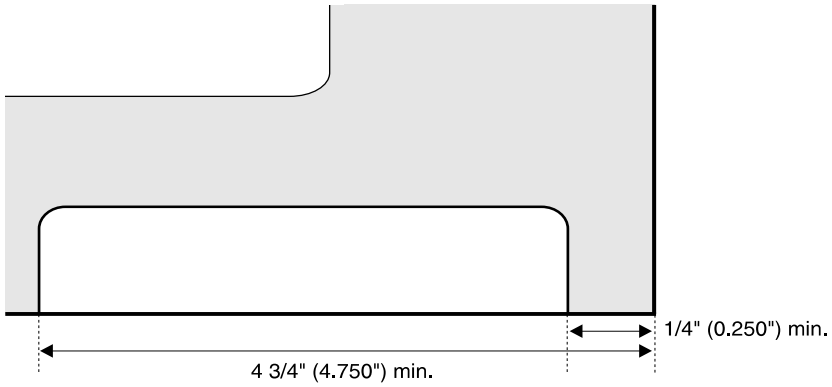
Exhibit 3-10
Window Clear Space
(not drawn to scale)



Windows designed for inserts containing POSTNET barcodes in the conventional lower right corner should be covered with a clear or transparent material that wraps around the bottom edge of the envelope. For sufficient envelope strength during high-speed processing, a clear or transparent plastic window covering is recommended for this type of mailing.

Windows designed for lower right barcodes must meet the minimum dimensions shown in exhibit 3-11. See chapter 5 or *Domestic Mail Manual* C840 for additional guidelines on barcodes applied in the lower right corner.

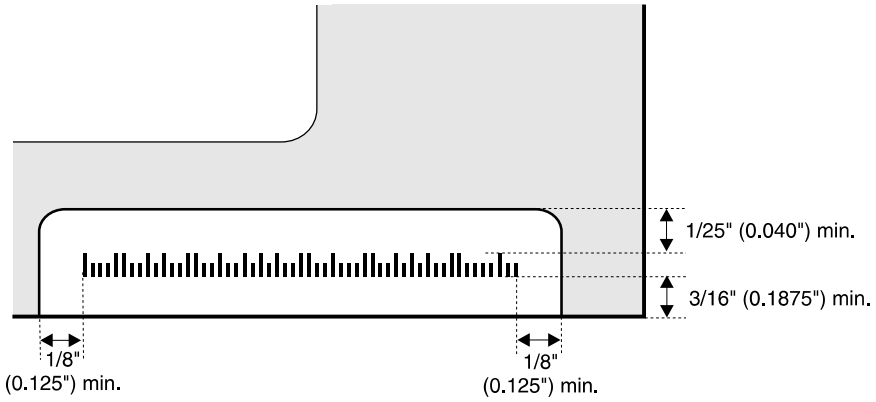
Exhibit 3-11
Lower Right Barcode Window
(not drawn to scale)



The size of the window and insert must allow for the following clearances between the POSTNET barcode and the edges of the window opening (see exhibit 3-12):

- As the insert moves left or right in the envelope, a minimum clearance space of $^1/_8$ inch (0.125 inch) — $^1/_4$ inch (0.250 inch) is preferred — must be maintained between the barcode and the left and right edges of the window.
- As the insert moves up or down in the envelope, a minimum clearance space of $^1/_{25}$ inch (0.040 inch) must be maintained between the top of the barcode and the top window edge, and at least $^3/_{16}$ inch (0.1875 inch) between the bottom of the barcode and the bottom window edge.

Exhibit 3-12
Barcode Clearance
(not drawn to scale)



Labels and Stickers

General Standard

Address labels and certain types of stickers placed on the outside of letter mail must be applied using methods and materials that prevent these labels from being damaged or removed during high-speed processing.

Address labels should not contain extraneous printing or designs that interfere with the ability of postal barcode scanners to read the barcode and address information. Stickers must not be placed in the OCR or BCS read areas.

Permanent Labels

Permanent labels and stickers (not designed to be removed and reused) should be applied with a permanent adhesive or glue. Dextrin-based (recyclable) adhesives are recommended.

Pressure-sensitive peel-off labels and stickers intended to be permanent on letter mail must have a minimum peel adhesion value of 8 ounces per inch. (This value is determined by the force required to remove, at a 90-degree angle, the label or sticker from a stainless steel surface.)

Manufacturers and suppliers of pressure-sensitive labels and stickers can provide you with information about the peel adhesion values of their products. To avoid problems in our processing operations, you should allow Postal Service Engineering to test samples of your labels before you use them in mailings. Ask your mailpiece design analyst to arrange for the test.

Removable Labels

Labels and stickers to be removed from a backing or liner on letter mail and reused (such as “sandwich labels”) must meet these guidelines:

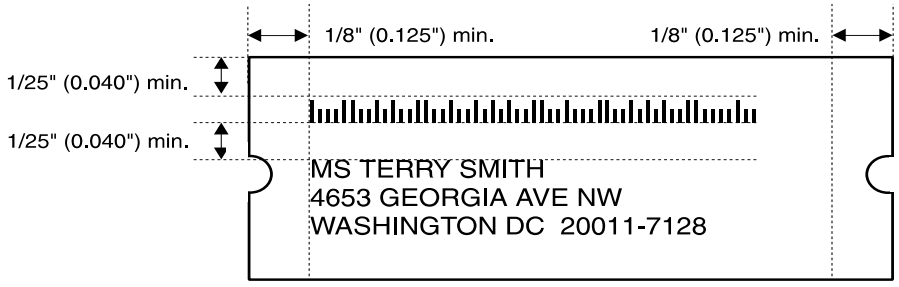
- The adhesive on the backing or liner, which is permanently attached to the mailpiece, must have a minimum peel adhesion value of 8 ounces per inch when *applied* to a stainless steel surface.
- The adhesive on the removable label must have a minimum peel adhesion value of 2 ounces per inch when *applied* to the face of the backing or liner.
- The adhesive on the removable label must have a minimum peel adhesion value of 8 ounces per inch when *reapplied* to a stainless steel surface.

Barcode Clearance

The following minimum clearances for the POSTNET barcode, when applied to address labels, are the same as the clearances required for barcoded inserts in window envelopes (see exhibit 3-13):

- $^1/_8$ inch (0.125 inch) between the left and right of the barcode and the left and right edges of the label or other printing.
- $^1/_{25}$ inch (0.040 inch) between the top and bottom of the barcode and the top and bottom edges of the label or other printing.

Exhibit 3-13
Address Label
(not drawn to scale)



Mailpiece Flexibility

In addition to size, shape, and material used to create your letter mail, flexibility and rigidity of the mailpiece are important. The contents of your mail must be reasonably flexible to ensure proper transport through our automated system.

Our processing equipment moves letter mail at a speed of up to 30,000 pieces an hour through a series of belts, rollers, and conveyor wheels. Each mailpiece must be able to maneuver successfully through this equipment.

At the same time, if your mail is too flimsy, it might catch in the metal joints of the processing equipment. Extremely flimsy and thin mailpieces also tend to stick together or adhere to other pieces easily, causing missorts and possible misdelivery of the mail.

Because pens, pencils, keys, large coins, and other rigid items can damage mail and mail processing equipment, they should never be included in letter mail, and they are prohibited in letter-size mail submitted at an automation rate.

Items such as credit cards and small coins firmly affixed to the contents of the mailpiece are usually acceptable if the mailpiece and its contents can bend easily around an 11-inch-diameter drum.

Refer any question about mailpiece dimensions, materials, construction, or contents to your mailpiece design analyst, account representative, or postal business center.

4 Automation Addressing

General Standards

For successful processing by optical character readers (OCRs), addresses on your letter mail need to be machine-printed, with a uniform left margin, and formatted in a manner that allows an OCR to recognize the information and find a match in its address files.

The address must also be as complete as possible so that the OCR can barcode the piece for the most precise point of delivery. In this way, you greatly improve the deliverability of your mailpiece. The Postal Service is better able to identify the correct delivery address the first time that the mailpiece is processed on postal equipment.

For faster, more accurate processing, include in the delivery address the street designators (for example, BLVD, DR); directionals (for example, NE, SW); the apartment, suite, or room number; and a ZIP+4 code. See appendix D for a list of standard postal abbreviations.

The OCR can read a combination of uppercase and lowercase characters in addresses *but prefers all uppercase characters*. Even though OCR enhancements now allow effective reading of punctuation in addresses, it is still suggested that punctuation be omitted when possible.

Whether punctuation is included in the address, the ZIP+4 format is five digits, a hyphen, and four digits (for example, 12345-6789). Better quality addresses help us to provide you with better quality service. For details on proper addressing, see Publication 28, *Postal Addressing Standards.*

For automation rates, the Postal Service may soon require mailers to prepare their mailings with addresses that have been verified and corrected using Postal Service-approved address matching software or processes. Your local mailpiece design analyst can provide you with more information.

Standard Address Format

Overview

The correct address format is shown below and described in the following sections. Each line of the address is explained, from the bottom of the mailpiece to the top — the order in which the optical character reader scans an address (see exhibit 4-1).

Exhibit 4-1
Standard Address Format

(Optional)	Nonaddress data	FEL01225-66H
(Optional)	Information/attention	HARRY FELDMAN PRES
	Recipient	FELDMAN INSURANCE AGENCY
	Delivery address	236 SUNSET AVE RM 101
	Post office, state, ZIP+4	LOS ANGELES CA 90012-0001

Post Office, State, and ZIP+4 Line

For domestic mail, the post office (city), state, and ZIP Code or ZIP+4 must appear in that order on the bottom line of the address. If all three elements cannot fit onto one line, you must place the ZIP Code or ZIP+4 on the line immediately *below* the post office and state, aligned with the left edge of the address block.

You should use the standard two-letter state abbreviations (see appendix D). Chapter 5 provides additional information about printing the numeric equivalent of the delivery point barcode on the bottom line of the address.

Delivery Address Line

The line immediately above the bottom line is the delivery address line. The street address, post office box number, rural route number and box number, or highway contract route number and box number must appear on this line.

For mail addressed to the occupants of a multiunit building, you should include the apartment, suite, or room number (or other unit designation) at the end of the delivery address line.

When it is necessary to reduce the length of the delivery address line, you must place the apartment number or other unit designator on the line immediately *above* the delivery address line. When use of a building name is required, you should also place that name on the line immediately above the delivery address line.

When addressing mail to a rural route, highway contract route, or post office box, you should print the information as shown in the examples in exhibit 4-2.

Exhibit 4-2
Rural/Post Office Box Addressing

Delivery Type	Address Abbreviation
Rural Route	RR 3 BOX 10
Highway Contract Route	HC 2 BOX 10
Post Office Box	PO BOX 184

Recipient Line

The name of the intended recipient (business or individual) should appear on the line above the delivery address line. If the address contains both the name of a business and the name of an individual or department within that business, place the name of the business on the recipient line.

The recipient line may be the third, fourth, or fifth line from the bottom, depending on overflow from the delivery address line because of dual addressing or other extra wording.

Information/Attention Line

The line above the recipient line is optional for additional address information. Use this line to direct mail to a specific person (or department) or to provide other information that facilitates delivery within a company.

Nonaddress Data Line

Any nonaddress data — such as account numbers, subscription order codes, presort codes, and advertising — should appear on the line above the recipient line or the information/attention line, whichever is higher.

Other Address Formats

Dual Addresses

Dual delivery addresses — using both a street address and a post office box number in one delivery address — are not recommended. If you choose to use dual addressing, place the delivery designation (the address where you want the mail to be delivered) on the delivery address line and the other designation on the line immediately above the delivery address line. Never place the two designations together on one line.

The Postal Service will deliver the mail to the address designated on the delivery address line, which is always the line immediately above the post office, state, and ZIP+4 line.

The ZIP Code, ZIP+4 code, or delivery point code shown on the last line of the address must always match the address that you show on the delivery address line (see exhibit 4-3).

Exhibit 4-3
Dual Address

Dual address <
GRAND PRODS INC
100 MAJOR ST
PO BOX 200 ←*Mail is delivered here*
NEW YORK NY 10001-0200

Military Addresses

In the military address format shown in exhibit 4-4, APO (Army/Air Force post office) or FPO (fleet post office) is the equivalent of a city name. AE, AP, and AA are the equivalents of state abbreviations assigned by geographic areas as follows:

- AE (ZIP Codes 090–098) designates Armed Forces in Europe, the Middle East, and Africa.
- AP (ZIP Codes 962–966) designates Armed Forces in the Pacific.
- AA (ZIP Code 340) designates Armed Forces in Central America and South America.

Exhibit 4-4
Military Address Format

MAJOR JOHN THOMAS
7024 AIRPS
PSC 3 BOX 2051
APO AE 09021-2072

PC1 DAVID JONES
X-1 DIV/ADMIN
USS KITTY HAWK (CVA-61)
FPO AP 96634-2770

PFC SUSAN SMITH
COMPANY A 122 SIG BN
UNIT 20511 BOX 4290
APO AA 34049-2342

Foreign Addresses

For mail addressed to foreign countries (see exhibit 4-5), you must include in capital letters the complete country name written in English (no abbreviations) as the only information on the bottom line of the delivery address.

Additional information on mailing to foreign countries is in the *International Mail Manual* (IMM). See chapter 1 for information on how to order a copy of the IMM, or contact your local post office or postal business center for assistance.

Exhibit 4-5
Foreign Address Format

MR THOMAS CLARK
117 RUSSELL DRIVE
LONDON WIP7HQ
ENGLAND

Exception: For mail addressed to Canada (see exhibit 4-6), you may use either format shown if you include in the address the postal delivery zone (the equivalent of our ZIP Code).

Exhibit 4-6
Canada Address Format

MRS HELEN K SAUNDERS
1010 CLEAR STREET
OTTAWA ONTARIO K1A OB1
CANADA

MRS HELEN K SAUNDERS
1010 CLEAR STREET
OTTAWA ONTARIO CANADA
K1A OB1

Mailpiece Clear Zones

Purpose

Several places on the address side of a mailpiece are reserved for addressing and related information only. These areas are the OCR read area, the barcode clear zone, and the return address area.

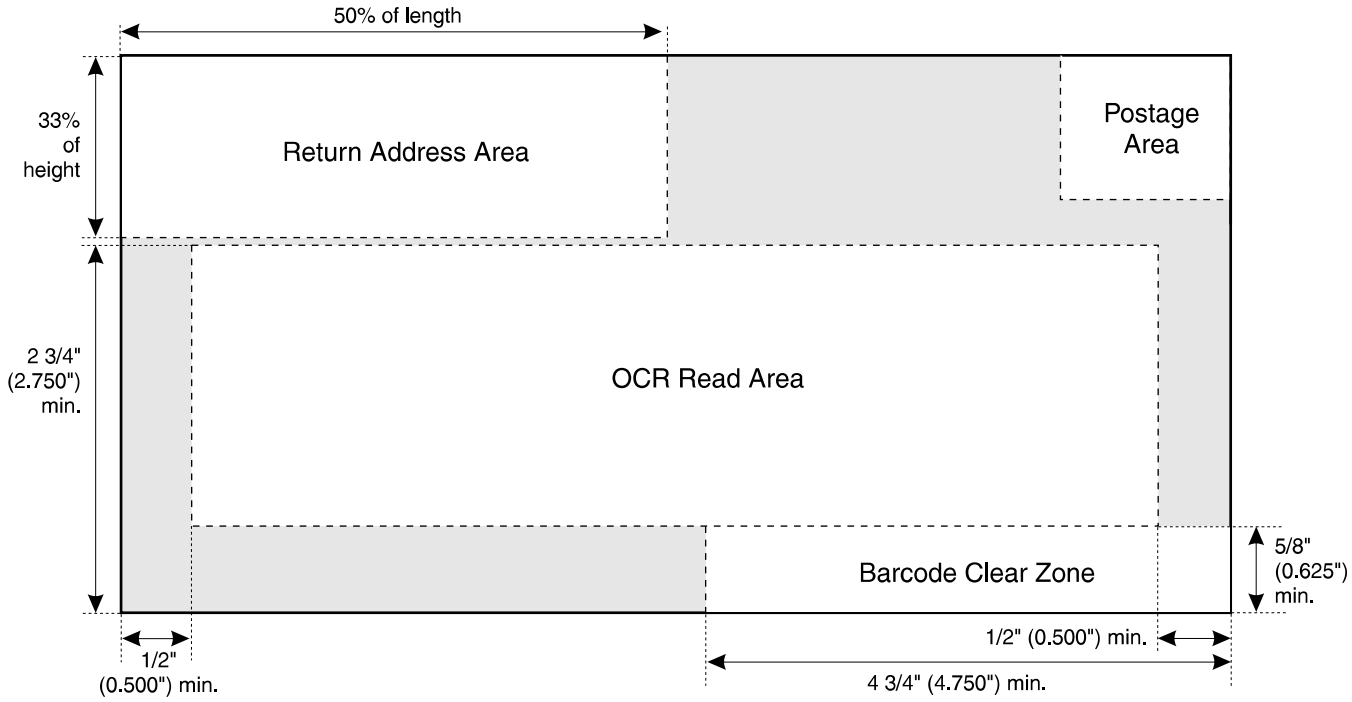
Address Block Location

Exhibit 4-7 shows the area on letter mail where address information must be located to be read by optical character readers (OCRs) and other postal automated equipment. The automation specifications are as follows:

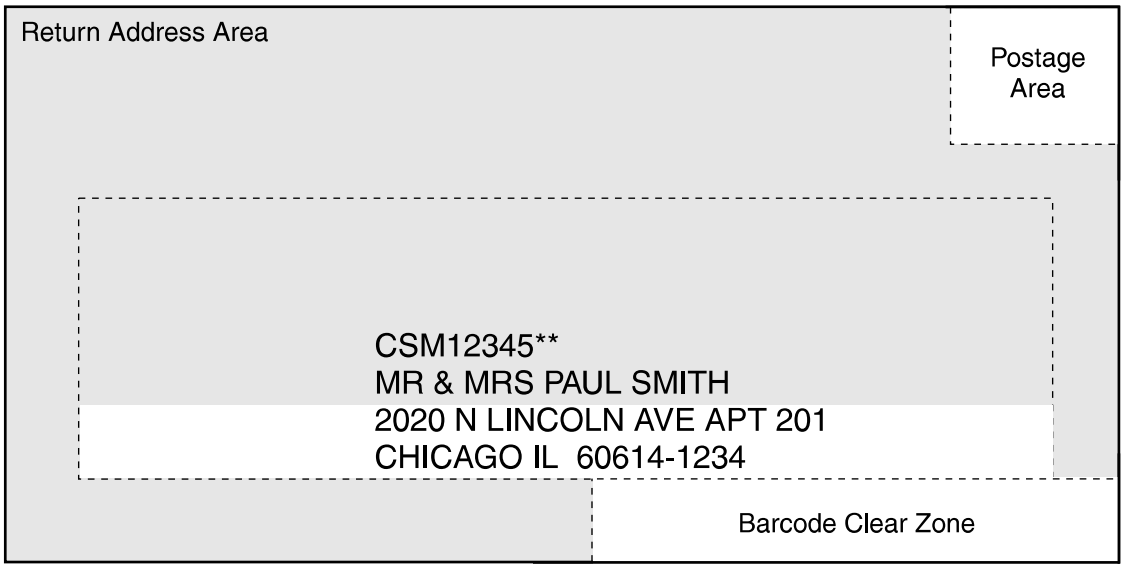
- The OCR read area requires only ½-inch (0.500-inch) margins on the left and right sides, but the entire address should be positioned within 9¾ inches (9.750 inches) of the right edge of letter mail measuring 10¼ inches to 11½ inches (10.250 inches to 11.500 inches) long.
- The entire address (exclusive of the optional lines above the recipient line) should appear within an imaginary rectangle, which extends from ⅝ inch to 2¾ inches (0.625 inch to 2.750 inches) from the bottom edge of the mailpiece, with a ½-inch (0.500-inch) margin on each side (left and right margins).

Exhibit 4-7
Mailpiece Clear Zones and Free Space
(not drawn to scale)

Mailpiece Clear Zones (White Areas)



Free Space for Nonaddress Printing (Shaded Area)



Nonaddress Printing

Extraneous (nonaddress) printing in the optical character reader (OCR) read area can confuse OCR scanners and cause the rejection of the mailpiece (the inability to read and interpret the address information correctly).

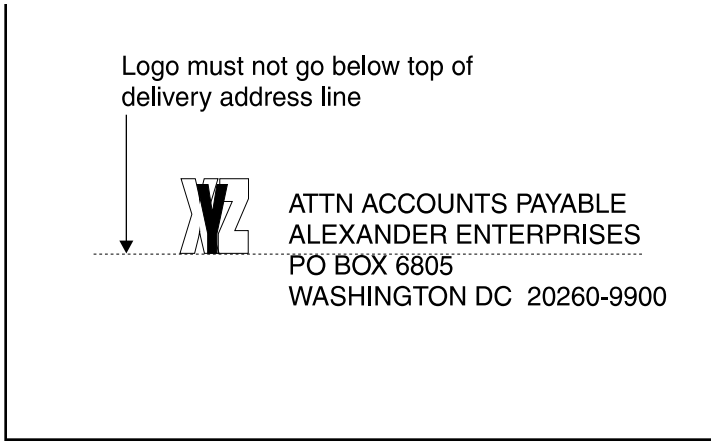
You may place nonaddress printing such as company logos, advertising, and die cuts within the OCR read area only if you position this printing so that the lowest point is *above* the delivery address line. In other words, within the OCR read area, you must keep the space on either side of and below the delivery address line clear of all printing (see exhibit 4-8).

In exhibit 4-7, the area available for nonaddress printing increases as the address block is lowered in the OCR read area. Positioning the address block near the bottom of the OCR read area gives you the most free space for logos, advertising, and other nonaddress printing. If you barcode the mailpiece, even more space is available.

Nonaddress printing and die cuts are not permitted in the OCR read area on either side of or below the delivery address line. This standard also applies to addresses printed on inserts in window envelopes.

For more information on barcoding, see chapter 5 or *Domestic Mail Manual* C830.

Exhibit 4-8
Nonaddress Printing



Return Address

You must always keep the optical character reader (OCR) read area clear of return address information. If all or part of the return address appears in the read area and this address is read by the OCR, your mailpiece is sent to that address — back to you.

In addition to being positioned at least 2 3/4 inches (2.750 inches) above the bottom edge of the mailpiece, the return address should occupy an area in the far upper left corner of the mailpiece no longer than 50 percent of the length of the mailpiece as shown in exhibit 4-7. The return address should be printed in a type size smaller than the type size used in the delivery address.

Barcode Clear Zone

After reading the address, the OCR prints the appropriate POSTNET barcode near the bottom of the mailpiece for subsequent mail processing. To ensure that the barcode is readable by barcode sorters, the barcode clear zone — 5/8 inch (0.625 inch) high by 4 3/4 inches (4.750 inches) long — shown in exhibit 4-7 must be clear of all printing, markings, and colored borders. Certain types of coated paper should be avoided as discussed in chapter 3.

Address Block Barcoding

POSTNET barcodes preprinted in the address block area of letter mail require a small clear area between the barcode and other printing and window edges (see chapter 5). If your barcoded mailpieces contain address block barcoding, addressed inserts, or nonbarcoded pieces, those pieces must meet all OCR readability requirements (see chapter 4 and *Domestic Mail Manual* C830).

Facing Identification Mark Clear Zone

A clear zone is also needed for facing identification mark (FIM) patterns preprinted on business reply mail and courtesy reply mail (see chapter 6).

Address Printing Guidelines

Type Style

Because type styles (fonts) described as simple sans serif (nonserifed) are more easily read by optical character readers (OCRs), these styles are recommended for printing the delivery address. Exhibit 4-9 lists type styles that have been tested and verified to read well on our OCRs.

To claim one of the automation rates, make sure that your mailpiece bears a legible, machine-printed address using one of the approved type styles. If you are unsure of a type style or size, contact a mailpiece design analyst, account representative, or other postal business center personnel for assistance.

Exhibit 4-9
OCR-Readable Type Styles

Tested and Verified	Similar Styles	
Centry Light Schoolbook	Century	
Elite	(none)	
Fritz Quadrata	(none)	
Futura Medium	Airport	Techica
	Alphatura	Techno
	Contempra	Tempo
	Future	Twentieth
	Photura	Century
	Sparta	Vogue
	Stylon	
Helios	Akzidenz-Grotesk	
	Buch	
Helios Light	Aristocrat	
Helvetica	Claro	
Helvetica Light	Europa Grotesk	
Helvetica Regular	Geneva	
Honeywell H200	(none)	
IBM 1403	(none)	
IBM 1428	(none)	
Koronna Regular	Aquarius	News No. 6
	Corona	Nimbus
	Crown	Royal
	Koronna	
	News No. 3	
	News No. 5	
Manifold 72	(none)	

Tested and Verified	Similar Styles	
Megaron Bold	Hamilton	
Megaron Medium	Newton	
News Gothic	Alpha Gothic	
Trade Gothic	Classified News	
Newtext Regular Condensed	(none)	
OCR A	(none)	
OCR B	(none)	
Optima	Athena	Optimist
	Chelmsford	Oracle
	Musica	Roma
	October	Theme
	Omega	Zenith
Pica	(none)	
Standard Typewriter	(none)	
Stymie Medium	Alexandria	Memphis
	Beton	Pyramid
	Cairo	Rockwell
	Karnak	
Triumverate	Sonoman Sanserif	
Triumverate Bold	Spectra	
Triumverate Regular	Vega	
Univers	Alphavers	
Univers 5	Eterna	
Univers Medium	Galaxy	Versatile
	Kosmos	
Universal	(none)	

Display Type

As a rule, do not use type styles defined as light, bold, extended, or condensed (see exhibit 4-10). Also, do not use italic, highly ornamental, or script-like styles. Stylized and script printing may not be used on mail claimed at automation rates.

Exhibit 4-10
Unacceptable Type Styles

BOLD
EXTENDED
CONDENSED

Italic
Stylized
Script

Flat-Top Characters

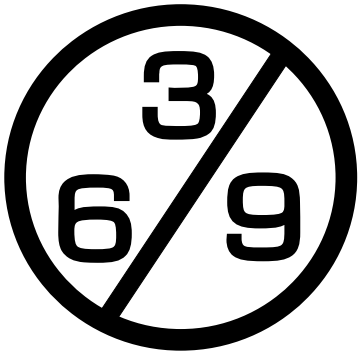
Also, avoid type styles that can be misread by OCRs. These include styles with “flat-top” threes (which can be misread as fives) and “flat-top” sixes or nines (which can be misread as eights) (see exhibit 4-11).

Exhibit 4-11
Flat-Top Characters

Preferred

3
6
9

Not Recommended

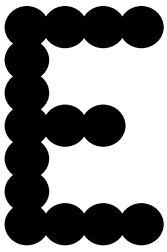


Dot Matrix Characters

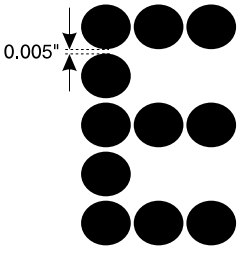
Dot matrix characters can be read by OCRs if the dots that form each character touch one another or are not separated by more than $^{5}/_{1000}$ inch (0.005 inch). See exhibit 4-12 for clarification.

Exhibit 4-12
Dot Matrix Characters
(not actual size)

Preferred Spacing



Maximum Spacing



Type Size

Our optical character readers (OCRs) can recognize type sizes between 8 and 18 points (see exhibit 4-13). A point is a printing unit equal to about 1/72 inch (0.0138 inch). The recommended type size is 10 to 12 points.

If you use type as small as 8 points for an address, you should print the address in all uppercase characters to satisfy the OCR's minimum height and width requirements. In some type styles, 8-point uppercase characters do not meet the minimum 0.080-inch height requirements of our OCRs.

If you use 18-point type, you should check character height to ensure that the type does not exceed the maximum size shown on Notice 67, *Automation Template.* Some styles of 18-point type are larger than others.

Exhibit 4-13
Type Sizes

8 Points (Minimum)

10 Points (Preferred)

12 Points (Preferred)

18 Points (Maximum)

Character Stroke Width

The stroke is the line or lines that form each character (see exhibit 4-14). For optical character reader (OCR) processing, it is important that character stroke width be uniform throughout each character. Characters must also be within a minimum and maximum size range (3/4 to 2 points). Common sans serif type styles satisfy this need.

Exhibit 4-14
Character Stroke Width
(not drawn to scale)

Character Spacing

To identify each character in the address, the optical character reader (OCR) must see a clear vertical space between the characters. Spacing between 3/4 and 3 points is acceptable.

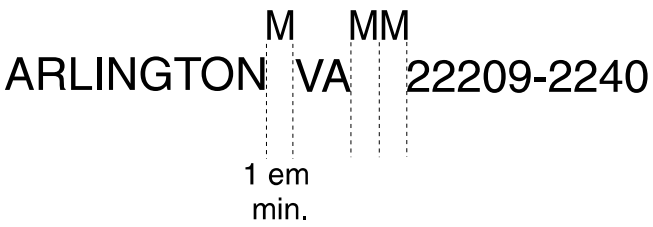
However, 1-point character spacing is recommended. Kerning or the overlapping or nesting of characters for special effects and appearances may not be used for printing address information (see exhibit 4-15).

Exhibit 4-15
Character Spacing
(not drawn to scale)

Word Spacing

To separate each word in the address, the optical character reader (OCR) requires a horizontal clear space between words that is at least equal to the width of one full-size character such as a capital M (see exhibit 4-16). Spacing between words should not exceed five full-size character spaces. This includes spacing between the two-letter state abbreviation and the ZIP Code or ZIP+4.

Exhibit 4-16
Word Spacing
(not drawn to scale)



Line Spacing

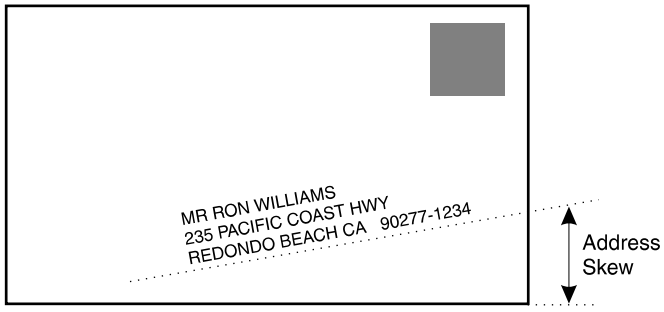
To separate each line in the address, the optical character reader (OCR) requires a vertical clear space between address lines that is at least 2 points (see exhibit 4-17). The maximum space between lines is the height of two full-size characters.

Exhibit 4-17
Line Spacing
(not drawn to scale)

Address Block Skew

If the address block is slanted too much, the OCR might be unable to see a clear vertical space between each character. For this reason, the address should not be slanted (or skewed) more than 5 degrees, relative to the bottom edge of the mailpiece (see exhibit 4-18). This standard is especially important for the proper application of address labels.

Exhibit 4-18
Address Block Skew



Interfering Print

You should avoid using preprinted forms, labels, or inserts containing lines (such as dotted rules for address placement), outline boxes (such as borders for address placement), or prompting words (such as “TO:”) in the address area. These nonaddress elements can interfere with optical character reader (OCR) recognition of the delivery address.

Print Quality

Print quality is one of the most important factors for successful optical character reader (OCR) processing. Address characters should be clean, sharp, dark, and uniformly printed. Smudges, fill-ins, voids (inking gaps within characters), and splatter (extraneous ink outside character boundaries) can adversely affect OCR processing. The printer, typewriter, or ink jet printer should be checked and cleaned often to ensure crisp, clear printing.

Reflectance and Print Contrast

Reflectance

The ability of paper to reflect light is also an important factor for optical character reader (OCR) recognition. The surface containing the address — whether an envelope, card, label, or insert — should be light enough in color to reflect a sufficient amount of light to the OCR's scanner. Although a white background is preferred, pastels and many other light colors are acceptable. Your local mailpiece design analyst can provide you with a list of acceptable background colors.

You can check background reflectance with a Postal Service envelope reflectance meter or its equivalent. A reading of at least 50 percent in the red portion and 45 percent in the green portion of the optical spectrum is desirable.

Paper stocks used for envelopes and cards — as well as inks used for addresses and any other printing on the outside of letter-size mail — should not be fluorescent or phosphorescent. The glow from such paper stocks and inks can cause malfunctions during postal mail processing.

For window envelopes and labels, the OCR works best if the reflectance of the insert or label is about the same as that of the envelope. Some envelope inserts (checks, for example) are printed with a background pattern that can confuse the OCR. Designs and printing in the background might appear attractive to the human eye, but they can be mistaken for part of the address information by the OCR.

For the greatest contrast and best performance on postal processing equipment, the address should be printed in black ink on a white background. Several color combinations are also acceptable if the ink is dark enough and the background is light enough.

Resolve any issues about print, design, and color with postal personnel before producing the mailpiece. We can work with you to design an effective mailpiece and ensure quality processing.

Print Contrast Ratio

The contrast between printed address characters and the background is called print contrast ratio (PCR). This contrast can be measured with an envelope reflectance meter.

A PCR of at least 40 percent in both the red and the green portions of the optical spectrum is needed. Reverse printing (white or light-colored characters on a dark background) is not OCR-readable and therefore not acceptable for automation-rate mailpieces.

The inks used for addresses — and any other printing on the outside of letter-size mail — should not be fluorescent or phosphorescent. The glow from such inks can cause malfunctions during facer-canceler operations.

Background patterns that appear solid to the human eye but are printed in a halftone screen can interrupt OCR recognition. The dot structure in halftone screenings should be at least 200 dots (or at least 100 lines) per inch or at least a 20 percent screen (dot size).

Other background patterns with a PCR greater than 15 percent in the red and the green portions of the optical spectrum should be avoided in the OCR read area.

Measurement of Reflectance and PCR

Appendix A contains detailed definitions and formulas for determining background and ink reflectance. Appendix B contains calibration standards and measurement information for instruments capable of making optical reflectance and contrast measurements.

A list of readable color combinations is not included in this publication, owing to the wide range of variables that exists among different background materials and ink types. However, your local mailpiece design analyst is available to help you select the proper color combination for your mailpiece.

When color combinations must be considered and no means of measuring reflectance and contrast are available, choosing the lightest acceptable background color and the darkest acceptable ink color is the rule of thumb.

Refer questionable address background and printing colors to a postal mailpiece design analyst for testing.

5 POSTNET Barcodes

Description and Benefits

The POSTNET (POSTal Numeric Encoding Technique) barcode was developed by the Postal Service to encode ZIP Code information on letter mail for rapid and reliable sorting by barcode sorters (BCSs). The POSTNET barcode can represent a five-digit ZIP Code (32 bars), a nine-digit ZIP+4 code (52 bars), or an eleven-digit delivery point code (62 bars).

You may prebarcode your outgoing letter-size pieces (that is, print POSTNET barcodes onto the pieces yourself), as well as business reply mail and courtesy reply mail. Besides the service benefits, your prebarcoding can reduce your mailing costs by lower postage rates for outgoing letter mail and lower service fees for business reply mail returned through the Business Reply Mail Accounting System (BRMAS).

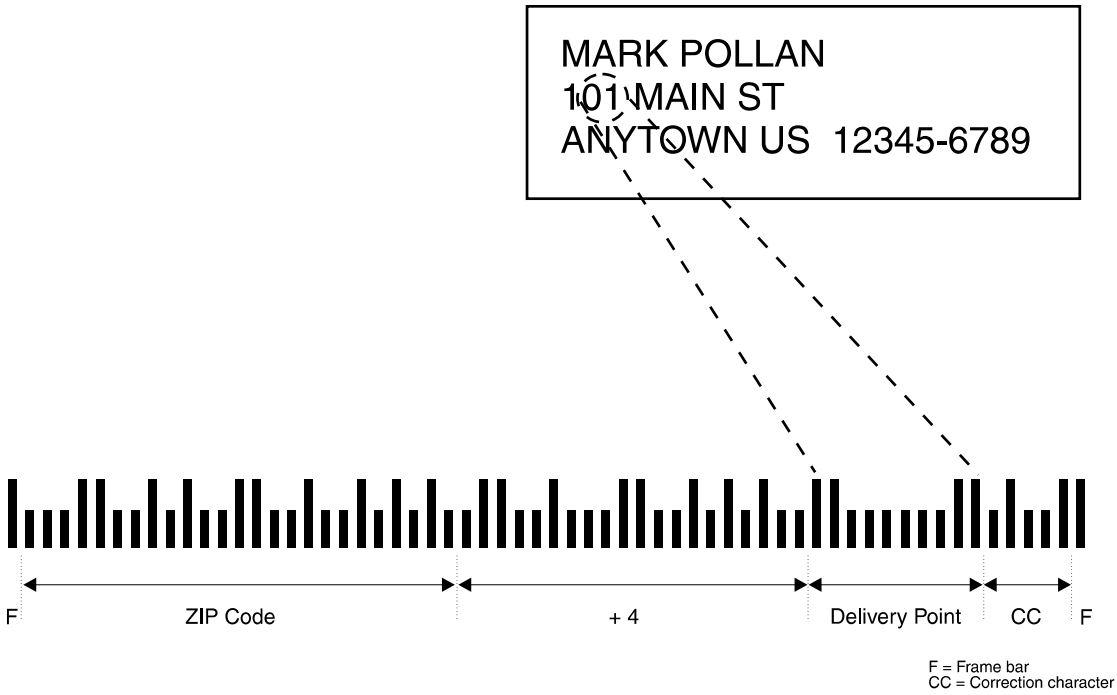
Camera-ready positives of POSTNET barcodes (and of FIMs for printing business reply mail and courtesy reply mail) are available without charge from your account representative or postal business center. These positives must not be enlarged or reduced. They are already produced at the correct size for reproduction on your mailpieces. See chapter 7 for information on reply mail designs.

Delivery Point Barcode

The delivery point barcode (DPBC) was developed by the Postal Service to identify each of the 125 million delivery points in the United States. This barcode forms the system foundation for significantly reducing the time used by carriers to sort letter mail before delivery.

The DPBC is formed by adding 10 bars to an existing ZIP+4 barcode (see exhibit 5-1). The 10 bars represent two additional digits (normally the last two digits of the street address, post office box, rural route number, or highway contract route number). *Domestic Mail Manual* C840 contains address coding rules for the DPBC, including rules for handling address anomalies.

Exhibit 5-1
Delivery Point Barcode
(not actual size)



DPBC Numerics

Postal customers who apply delivery point barcodes (DPBCs) with single-line optical scanning equipment may print the numeric equivalent of the DPBC on the last line of the address. The numeric equivalent is formed by adding three digits immediately after the ZIP+4 code.

The first two digits correspond to the DPBC address coding rules in *Domestic Mail Manual* module C, and the last digit is the correction character (see exhibit 5-2). When read from left to right, a correctly formatted DPBC numeric consists of five digits, a hyphen, and seven digits.

Exhibit 5-2
DPBC Numerics

MARK POLLAN
101 MAIN ST
ANYTOWN US 12345-6789

01 = last two numbers of primary street address

4 = correction character

(sum of 1, 2, 3, 4, 5, 6, 7, 8, 9, 0, and 1)	46
(addition of correction character 4)	+4
(multiple of 10)	50

POSTNET Format

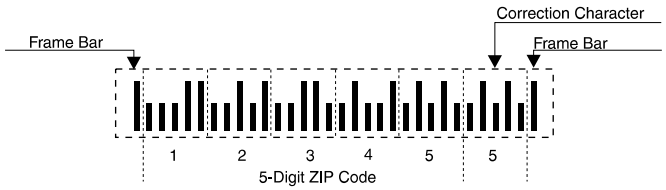
Description

Whether it represents five-, nine-, or eleven-digit ZIP Code information, the POSTNET barcode is always printed in a format that begins and ends with a frame bar (full or tall bar). To ensure POSTNET accuracy during mail processing, a correction character (five bars) must be included immediately before the rightmost frame bar of all POSTNET barcodes (see exhibit 5-3).

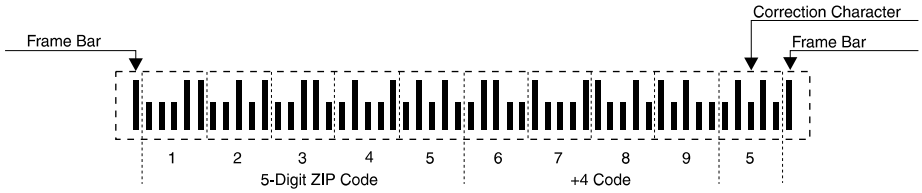
The correction character is always the digit that, when added to the sum of the other digits in the barcode, results in a total that is a multiple of 10. For example, the sum of the ZIP+4 barcode 12345-6789 is 45. Adding a correction character of 5 results in the sum of the 10 digits being a multiple of 10.

Exhibit 5-3
POSTNET Format
(not actual size)

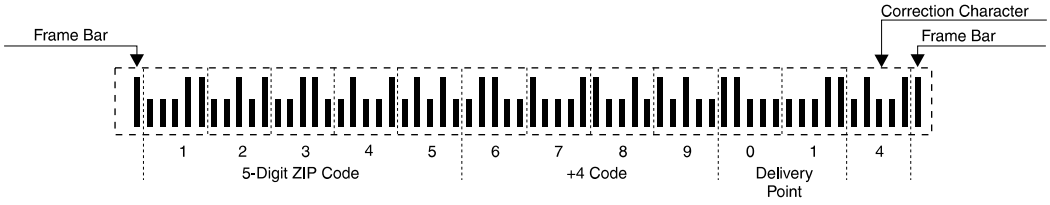
5-Digit ZIP Code (A Field)



ZIP+4 Code (C Field)



Delivery Point Code (C Prime Field)



Code Elements

The basic elements of the POSTNET barcode are binary digits, represented as full bars and half bars (or tall bars and short bars). A full bar represents “1” (one) and a half bar represents “0” (zero) (see exhibit 5-4). The geometry of the bars and their proper location on letter mail are covered in the following sections and exhibits.

Exhibit 5-4
Code Elements

Numeric Value	Binary Code Value 7 4 2 1 0	Barcode Value 74210
1	00011	
2	00101	
3	00110	
4	01001	
5	01010	
6	01100	
7	10001	
8	10010	
9	10100	
0	11000	

Code Characters

Each code character is made up of five bars, which together represent a single numeric digit. Specific combinations of two full bars and three half bars represent the digits 0 through 9. Only the 10 combinations shown in exhibit 5-4 are valid code characters — they represent all possible combinations of two full bars and three half bars.

These combinations are central to the error-recovery of POSTNET because the system interprets as an error the combination of five bars containing other than two full and three half bars.

Bar Position Weights

Except for zero, the numeric value of each valid combination of five bars can be determined by adding the "weights" of the two positions occupied by the full bars ("1s"). From left to right, the bar positions are weighted 7, 4, 2, 1, and 0 (see exhibit 5-4).

For example, the combination 01010 contains a full bar in the second position (weight 4) and in the fourth position (weight 1). Adding 4 and 1 yields 5 — the assigned value of this combination. The only exception is the combination 11000, which has a total weight of 11 but is assigned a value of zero.

Bar Spacing (Pitch)

Horizontal Spacing

The nominal horizontal spacing (pitch), defined as a bar and a space, must be limited to 22 bars (±2 bars) per inch when measured over any ½-inch (0.500-inch) portion of the barcode. The horizontal spacing at 24 bars per inch is 0.0416 inch and 0.050 inch at 20 bars per inch. There should be a clear space of at least 0.012 inch, but not more than 0.040 inch, between individual bars (see exhibit 5-5).

The dimensions described below should be maintained for five-, nine-, and eleven-digit POSTNET barcodes so that our barcode sorters can accommodate the tolerances encountered with different printing technologies.

Five-Digit ZIP Code (32 Bars — A Field)

The distance from the leading edge of the first (leftmost) bar to the leading edge of the thirty-second (rightmost) bar should be at least 1.245 inches. The distance from the leading edge of the first bar to the trailing edge of the thirty-second bar should not exceed 1.625 inches.

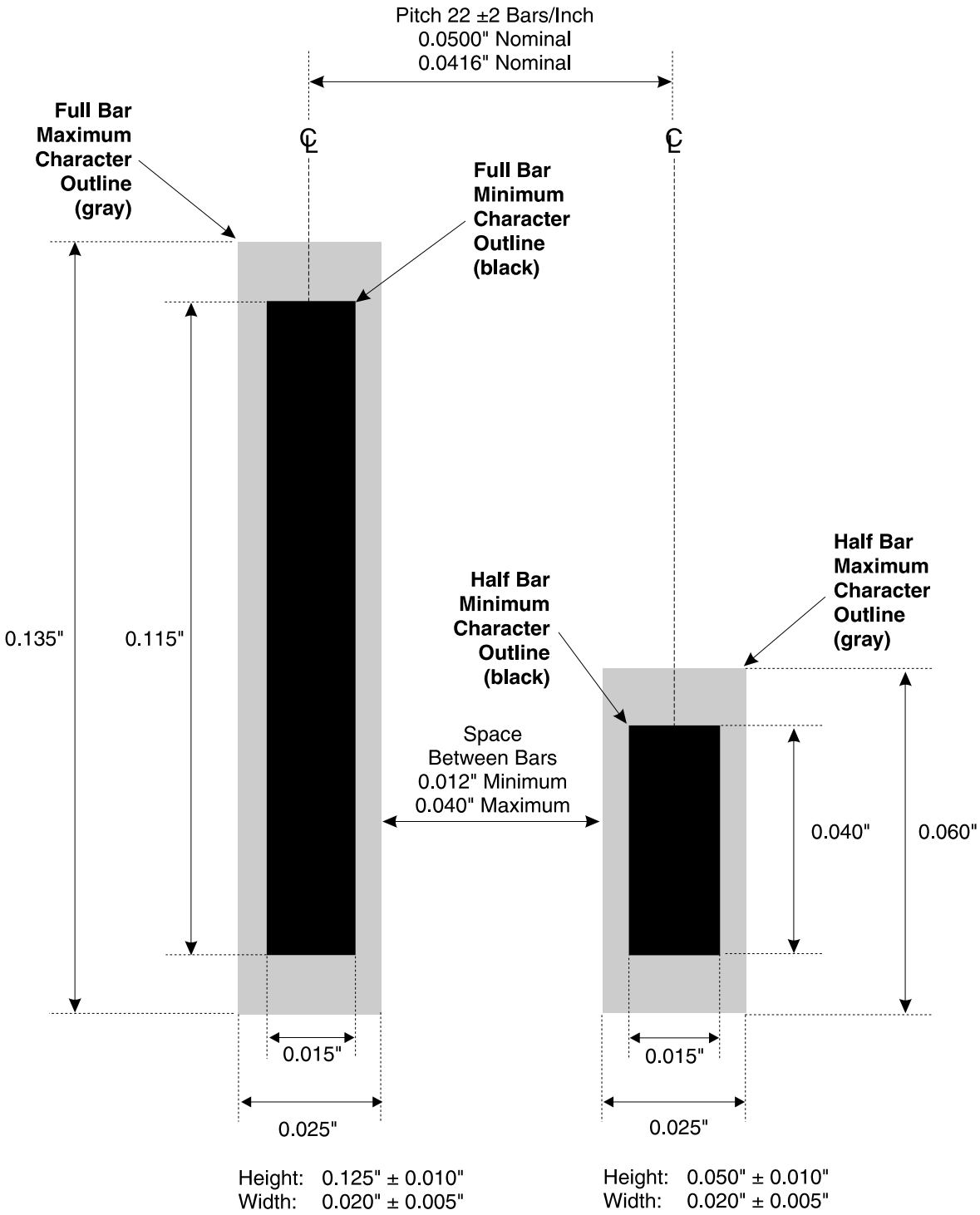
Nine-Digit ZIP+4 Code (52 Bars — C Field)

The distance from the leading edge of the first (leftmost) bar to the leading edge of the fifty-second (rightmost) bar should be at least 2.075 inches. The distance from the leading edge of the first bar to the trailing edge of the fifty-second bar should not exceed 2.625 inches.

Eleven-Digit Delivery Point Code (62 Bars — C Prime Field)

The distance from the leading edge of the first (leftmost) bar to the leading edge of the sixty-second (rightmost) bar should be at least 2.495 inches. The distance from the leading edge of the first bar to the trailing edge of the sixty-second bar should not exceed 3.125 inches.

Exhibit 5-5
POSTNET Barcode Specifications
(not drawn to scale)



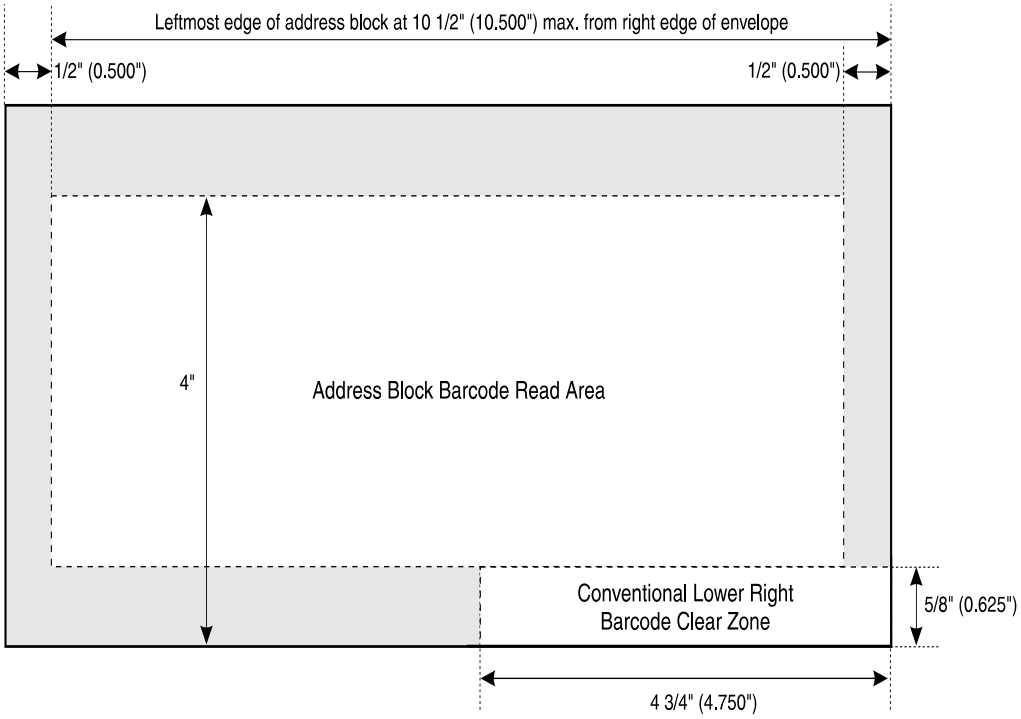
Barcode Locations

Placement

If you apply the POSTNET barcode to your outgoing letter mail, you may print the barcode in the lower right corner or as part of the address block (see exhibits 5-6, 5-7, and 5-8). (See the *Domestic Mail Manual* for restrictions on placement of the ZIP+4 barcode in the lower right corner of the envelope.)

Postal Service-applied barcodes are always printed in the lower right corner of the mailpiece. Regardless of placement, all POSTNET barcodes must be printed within the specifications shown in exhibit 5-5.

Exhibit 5-6
Barcode Placement Areas
(not drawn to scale)



Address Block

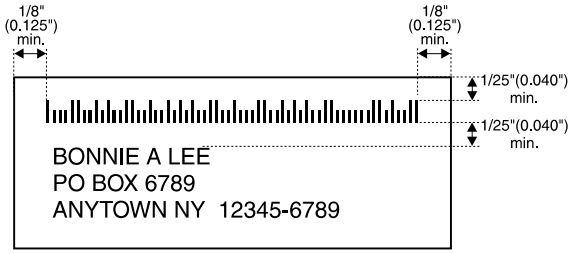
You may choose one of these four locations for the POSTNET barcode if you print it in an address block (see exhibit 5-7):

- Immediately above the recipient line.
- Immediately below the city, state, and ZIP Code line.
- If a keyline or optional endorsement line is used, above the recipient line but below the keyline and optional endorsement lines.

- If a keyline or optional endorsement line is used, immediately above the keyline and optional endorsement lines.

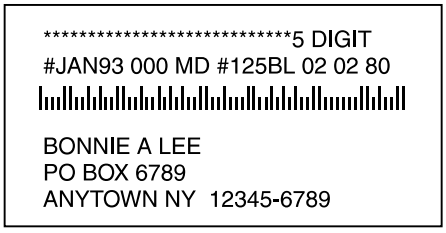
Exhibit 5-7
Address Block Barcode
(not drawn to scale)

Example A
Above Address
(Preferred)

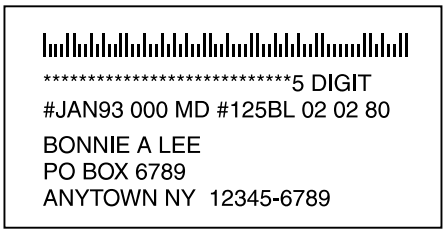


Example B
Below Address
(Acceptable)

Example C
Below Optional Endorsement Line
and/or Keyline Information
(Preferred)



Example D
Above Optional Endorsement Line
and/or Keyline Information
(Acceptable)



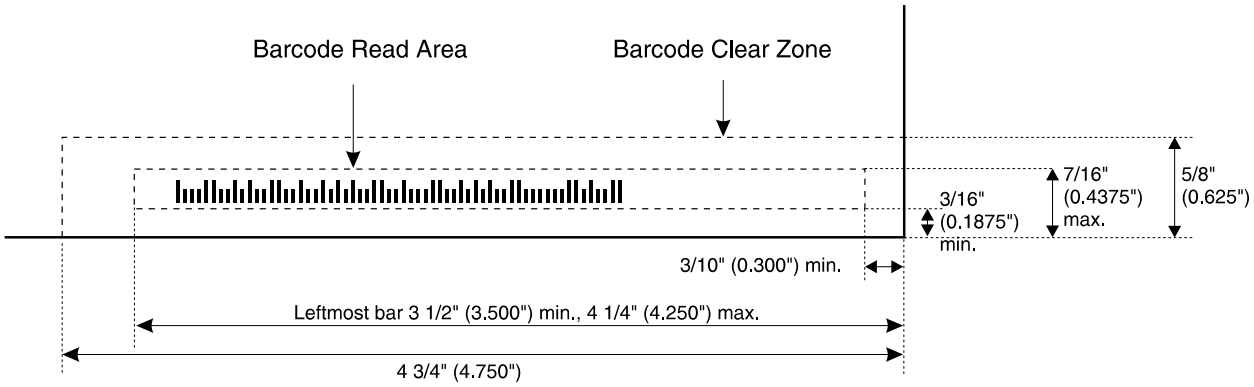
You may not apply the POSTNET barcode anywhere between the recipient line and the city, state, and ZIP Code line of the address (that is, do not place the barcode between any lines of the delivery address). Chapter 3 provides specifications for the clearance needed between address block barcodes and window edges, inserts, address labels, and other nonaddress printing.

Conventional Lower Right Corner

POSTNET barcodes printed in the lower right corner of letter mail must be positioned to meet the specifications shown in exhibit 5-8. The first (leftmost) bar of the barcode should appear between $3^1/_2$ inches (3.500 inches) and $4^1/_4$ inches (4.250 inches) from the right edge of the mailpiece.

If a five-digit barcode (32 bars) is necessary, the start bar must be positioned between $4^1/_8$ inches (4.125 inches) and $4^1/_4$ inches (4.250 inches) from the right edge. This positioning provides the Postal Service with the space needed to apply the remainder of the complete barcode to make it a delivery point barcode for more efficient processing and delivery operations.

Exhibit 5-8
Lower Right Corner Barcode
(not drawn to scale)



Bar Dimensions

The individual bars that make up the POSTNET barcode must be printed within the dimensional tolerances shown in exhibit 5-5. Edges of the bars must completely cover the minimum bar outlines but must not exceed the maximum outlines.

Barcode Layout

Bar Tilt

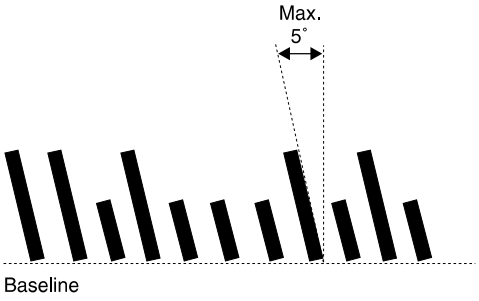
Two types of tilt can occur when printing POSTNET barcodes on a mailpiece (see exhibit 5-9):

- Bar rotation, in which the individual bars are tilted (not perpendicular) with respect to the baseline of the barcode.
- Pattern skew (or slant), in which the entire barcode is tilted with respect to the bottom edge of the mailpiece.

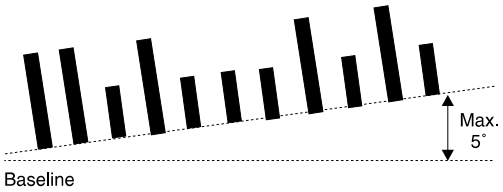
Both types of tilt can occur simultaneously. Because barcode sorters (BCSs) read barcode bars individually, these sorters cannot determine which type of tilt is present. Consequently, total bar tilt should be measured with respect to a perpendicular from the bottom edge of the mailpiece. The combined effects of pattern skew and bar rotation must be limited to a maximum tilt of 5 degrees.

Exhibit 5-9
Bar Tilt
(not drawn to scale)

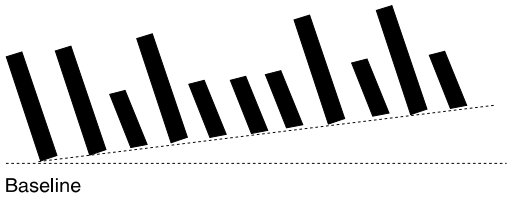
Bar Rotation



Pattern Skew



Combined Tilt

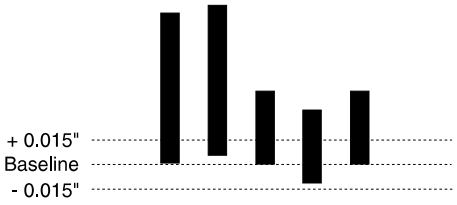


Baseline Shift

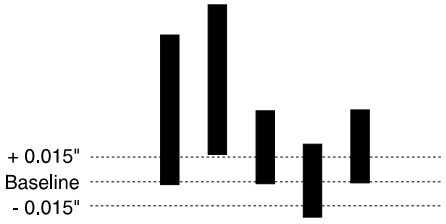
The vertical position of adjacent bars must not vary more than 0.015 inch from bar to bar when measured from the baseline (bottom) of the barcode (see exhibit 5-10).

Exhibit 5-10
Barcode Baseline Shift
(not drawn to scale)

Acceptable Baseline Shift



Unacceptable Baseline Shift



Barcode Printing

Background Reflectance

The area of the mailpiece where the barcode is to be placed (address block or lower right corner) should be uniform in color and produce a minimum reflectance of 50 percent in the red portion and 45 percent in the green portion of the optical spectrum, when measured with a Postal Service envelope reflectance meter or its equivalent.

Although a white background is preferred, pastels and other light colors are acceptable. The mailpiece should not fluoresce or phosphoresce because the glow can cause malfunctions during mail processing.

Print Reflectance Difference

The barcode sorter (BCS) responds to the difference between light reflected from the printed barcode and the background. This difference is defined as print reflectance difference (PRD). A PRD of at least 30 percent in the red and the green portions of the optical spectrum is necessary for reading POSTNET barcodes. Like print contrast ratio (PCR), PRD can be measured with a Postal Service envelope reflectance meter or its equivalent (see appendix A).

As with optical character readers (OCRs), barcode sorters (BCSs) respond best when the barcode is printed in black ink on a white background. Other color combinations are acceptable if the minimum PRD of 30 percent exists for the printed barcode. Refer questionable color combinations to your postal mailpiece design analyst for testing.

Overinking

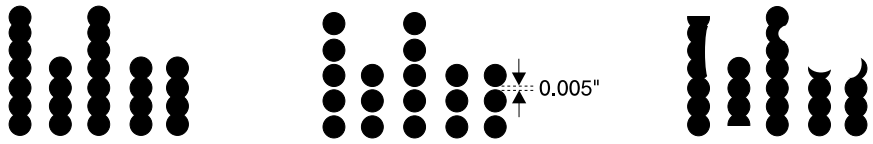
Overinking, which causes any bar to exceed its maximum dimensions, can prevent the barcode sorter (BCS) from successfully interpreting the barcode (see exhibit 5-11). Consequently, make sure that ink coverage does not cause any bar to exceed the height or width limitations in exhibit 5-5.

Exhibit 5-11
Overinking (Extraneous Ink)
(not actual size)

Voids

A void, which reduces any bar to less than its minimum dimensions, can prevent the barcode sorter (BCS) from successfully interpreting the barcode. In exhibit 5-12, a malfunctioning dot matrix printer created the voids. Ideally, dot matrix printing should yield dots that touch or overlap. If the dots are not touching, the space between the dots should not exceed 0.005 inch.

Exhibit 5-12
Voids
(not drawn to scale)



Extraneous Matter

Background patterns, envelope insert “show-through,” and any other printing within the clear areas surrounding the barcode (lower right corner and address block areas shown in exhibit 5-6) should be limited to a maximum print contrast ratio (PCR) of 15 percent in the red and the green portions of the optical spectrum. A PCR exceeding 15 percent can interfere with barcode recognition.

6 Facing Identification Marks

Description

Configuration

The facing identification mark (FIM) is a pattern of vertical bars printed in the upper right area of a mailpiece, to the left of the indicia or space for a stamp or metering.

A FIM pattern is essentially a nine-bit code consisting of bars and no-bar place holders. The presence of a bar can be considered a binary “1” (one); the absence of a bar, a binary “0” (zero). Consequently, the three FIM patterns translate into the binary codes in exhibit 6-1.

Purpose

FIM patterns serve these purposes:

- To allow letter mail that does not contain luminescent stamps or meter imprints (such as business reply mail and official government mail) to be faced (oriented) and canceled (postmarked) by machine.
- To allow business reply mail and courtesy reply mail to be separated from other letters and cards for direct processing by optical character readers (OCRs) or barcode sorters (BCSs).

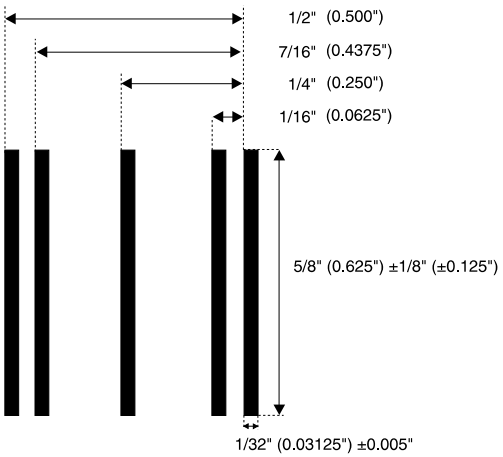
See chapter 7 for guidelines on the proper use of FIM patterns and POSTNET barcodes on business reply mail and courtesy reply mail.

Uses

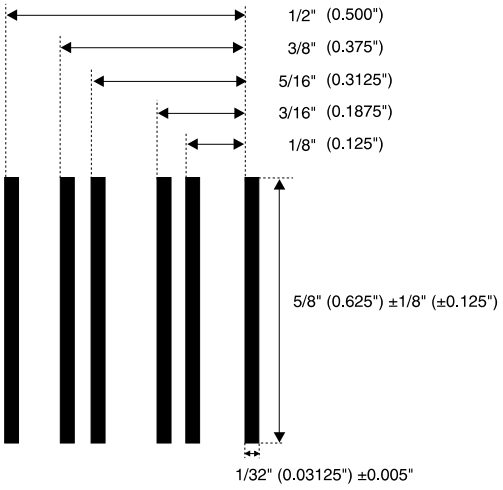
The use of each FIM pattern is restricted to specific types of reply mail and government mail, as shown in exhibit 6-1.

Exhibit 6-1
FIMs A, B, and C
(not drawn to scale)

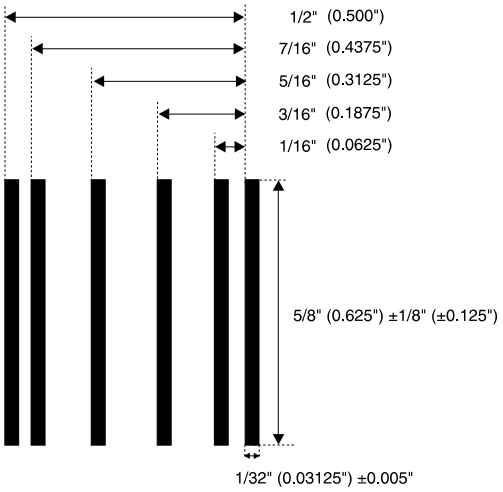
FIM A
Used for Courtesy Reply Mail
With POSTNET Barcode
(Binary Code — 110010011)



FIM B
Used for Business Reply Mail,
Penalty Mail, or
Franked Mail
Without POSTNET Barcode
(Binary Code — 101101101)



FIM C
Used for Business Reply Mail,
Penalty Mail, or
Franked Mail
With POSTNET Barcode
(Binary Code — 110101011)

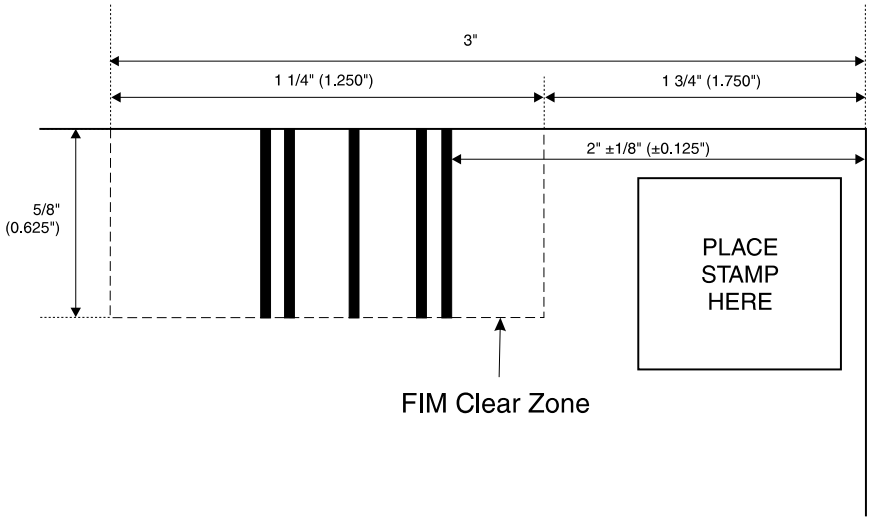


FIM Location

To use the FIM, make sure that the FIM meets these requirements:

- A FIM clear zone (see exhibit 6-2) must be maintained that contains no printing other than the FIM pattern. Exhibit 6-2 shows the configuration of the clear zone and the correct location of the FIM.
- The rightmost bar of the FIM must be 2 inches ±1/8 inch (±0.125 inch) from the right edge of the mailpiece.
- The FIM bars must be 5/8 inch (0.625 inch) high ±1/8 inch (±0.125 inch) and 1/32 inch (0.03125 inch) wide ±0.008 inch.
- The tops of the FIM bars must be no lower than 1/8 inch (0.125 inch) from the top of the mailpiece. They may extend over the top edge to the back (flap) of an envelope.
- The bottoms of the FIM bars should touch the bottom edge of the FIM clear zone but must not be more than 1/8 inch (0.125 inch) above or below that edge.

Exhibit 6-2
FIM Location
(not drawn to scale)



FIM Positives

FIM bars must be printed within the dimensional tolerances in exhibit 6-1. Camera-ready positives of FIM patterns provided at no charge by the Postal Service are 5/8 inch (0.625 inch) high. These positives must not be reduced or enlarged.

FIM Layout

Bar Tilt

Bar tilt (slant or skew) of the FIM must be limited to 5 degrees, relative to a line perpendicular to the top edge of the mailpiece.

Baseline Shift

The vertical position of FIM bars must not vary more than 0.008 inch as measured from the baseline (bottom) of the FIM pattern.

FIM Printing

Print Reflectance Differences

Like the barcode sorter (BCS), the FIM reader on our facer-cancelers responds to the differences in light reflected from the printed bars and the background. To detect and read FIM patterns on facer-cancelers, a print reflectance difference (PRD) of at least 30 percent in the red and the green portions of the optical spectrum is needed. PRD can be measured with a Postal Service envelope reflectance meter or its equivalent.

As with OCRs, the FIM reader responds best to black ink on a white background. Several color combinations are also acceptable if a minimum PRD of 30 percent is maintained. Refer questionable color combinations to your postal mailpiece design analyst for testing.

Overinking

Excessive or extraneous ink should not cause any FIM bar to exceed the recommended maximum height or width limitations shown in exhibit 6-1.

Voids

A void must not appear within any FIM bar that reduces the bar to less than 0.026 inch in width over a length of more than 0.040 inch. Similarly, voids must not reduce the height of any FIM bar to less than 0.050 inch.

Extraneous Matter

Within the FIM clear zone (see exhibit 6-2), background patterns, envelope insert “show-through,” and all other printing should not exceed a print contrast ratio (PCR) of 15 percent in the red and the green portions of the optical spectrum. A PCR exceeding 15 percent can interfere with bar recognition.

7 Reply Mail Standards

This chapter explains how to use POSTNET barcodes and FIM patterns on business reply mail (BRM) and courtesy reply mail (CRM). For detailed information, see *Domestic Mail Manual* S922 or ask your mailpiece design analyst for Publication 353, *Designing Reply Mail*.

U.S. Government agencies (including the Postal Service) that use official mail should refer to *Domestic Mail Manual* E050 and E060 for additional requirements.

Business Reply Mail

Using business reply mail (BRM) allows you to pay only for responses returned from your customers if they use your BRM pieces. You pay the single-piece First-Class rate and a per-piece charge, depending on the payment method that you select.

BRM is often used by customers to request information and place orders for merchandise. *Domestic Mail Manual* S922 contains all requirements for BRM, including BRM permits, payment methods, and discounts.

Courtesy Reply Mail

Courtesy reply mail (CRM) is similar to BRM, except that CRM requires the receiver to affix First-Class postage to the piece before mailing it back to the original sender. CRM pieces are most often enclosed with invoices mailed to customers for returning their payments.

FIMs and POSTNET Barcodes

FIM B and FIM C

A facing identification mark (FIM) — either FIM B or FIM C — is required on all letter-size business reply mail. FIM B is used only on nonbarcoded BRM pieces. FIM C is used for all barcoded BRM pieces. See *Domestic Mail Manual* S922 for this and all other requirements for BRM.

Because using a FIM benefits you, as well as the Postal Service, you should preprint FIM C and the appropriate POSTNET barcode on all your BRM pieces. As with other barcoded letters and cards, business reply mail containing preprinted POSTNET barcodes bypasses all other processing steps for direct barcode sorter (BCS) processing.

Exhibit 7-1 shows that BRM containing FIM C may be barcoded only in the conventional lower right corner. Currently, the correct position of the POSTNET barcode is still restricted to this position on BRM pieces. Chapters 5 and 6 contain details about barcode and FIM placement.

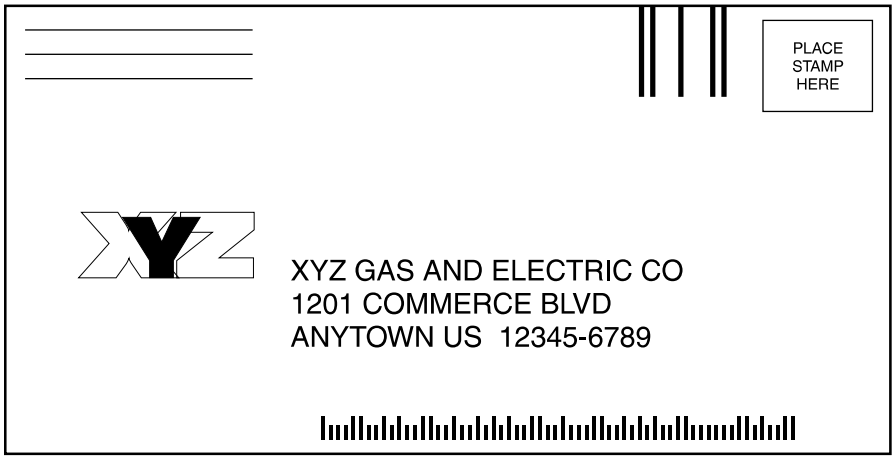
Exhibit 7-1
BRM FIM C and Barcode
(not drawn to scale)

FIM A

For improved and automated processing of your mail, preprint FIM A and the appropriate POSTNET barcode on all courtesy reply mail envelopes and cards.

Exhibit 7-2 shows that CRM containing FIM A may be barcoded in the conventional lower right corner or in the address block area (above or below the delivery address). Chapters 5 and 6 contain details about the placement of barcodes and FIMs.

Exhibit 7-2
CRM FIM A and Barcode
(not drawn to scale)



Avoiding Errors

Although properly preparing reply mail for automated processing benefits you and the Postal Service, an error in preparing BRM or CRM can negate those benefits. For example, printing the wrong barcode on a reply piece can direct your mail to the wrong post office. A wrong barcode delays delivery of your mail to your customers and adds extra processing steps for the Postal Service.

Even though barcodes representing different delivery points can look nearly identical, the correct barcode is essential. The barcode used for regular mail delivery may not be used for BRM. Different FIM patterns can also be confused with one another. Consequently, before formatting and printing reply mail, be sure that the barcode and FIM are correct for the particular application.

It is also important that you properly position the barcode and FIM on reply pieces for successful automated processing. If just part of the barcode lies outside the read area, the barcode might not be accurately scanned. In such cases, your mail is rejected by the barcode sorter and must be sorted by hand or by slower machines.

Mailpiece design analysts are assigned to postal business centers throughout the country to help you design your reply mail. Provide samples of your BRM or CRM pieces to an analyst early in the design process, allowing for changes before printing, to ensure that the best quality BRM or CRM piece is achieved. See appendix H for the postal business center nearest you.

POSTNET and FIM Positives

It is not necessary to design a FIM or a barcode yourself. The Postal Service provides camera-ready positives of the FIM and POSTNET barcode representing the correct ZIP+4 code (for BRM or CRM) or specific delivery point code (for CRM only).

Before printing reply mail, refer to chapter 5 for a description of the POSTNET barcode and its use. Also, see chapter 6 for the use of FIM patterns.

If using positives of POSTNET barcodes and FIMs obtained from sources other than the Postal Service, be certain that the codes meet all specifications in chapters 5 and 6.

A Ink/Paper Definitions

This appendix provides definitions and formulas for determining the reflectance of mailpiece backgrounds and printing ink, print contrast ratio (PCR), and print reflectance difference (PRD). Values for these parameters are always less than 1. Decimal fractions (e.g., 0.65) and percentages are used interchangeably. Percentages are used in this publication. All parameters are measured as shown in appendix B.

Reflectance

The symbol R is used for reflectance. Only diffuse (scattered) reflectance is of interest. It represents the percentage of incident light diffusely reflected by the material in question. A surface perfectly reflecting the incident light has a reflectance of 100 percent; a surface reflecting only half the incident light has a reflectance of 50 percent.

Print Reflectance Difference

$PRD = (R_W - R_p) \times 100$

R_W is the reflectance of the background (e.g., envelope or card)

R_p is the reflectance of the ink (e.g., character stroke)

Print Contrast Ratio

$$PCR = \frac{R_W - R_p}{R_W} \times 100$$

R_W and R_p are defined as above

B Ink/Paper Measurement

This appendix is for mailers who have instruments capable of measuring optical reflectance and contrast.

Instrument Calibration Standards

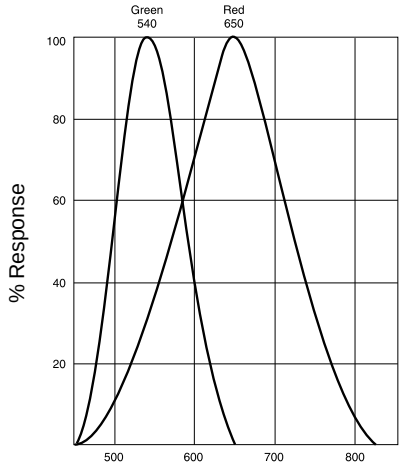
The measurements here apply only to diffuse reflectance. A perfectly reflecting, perfectly diffusing surface has a reflectance of 100 percent. This is the reference or basis for reflectance measurements. Calibrated pressed barium sulfate ($BaSO_4$) or magnesium oxide (MgO) is a suitable reference standard for instrument calibration to indicate 100 percent reflectance for a white surface.

Carbon black or other black backing such as black velvet that reflects less than 1 percent light may be used as a suitable reference standard for zero reflectance. Instruments should be calibrated according to the manufacturer's instructions using either the above primary standards or the secondary standards supplied with the measurement equipment.

Instrumentation

Measurements may be made using the Postal Service-approved envelope reflectance meter. If other instruments are used, they should provide the appropriate spectral response characteristics in the red and the green portions of the optical spectrum shown in the illustration below and described on the next page.

Spectral Response Curves



Area Resolution

For measurements associated with POSTNET barcode functions, the effective area measured by the Postal Service envelope reflectance meter (ERM-2) is 6 mils (0.006 inch) by 10 mils (0.010 inch).

Address Block Measurements

Reflectance and contrast measurements on POSTNET barcodes and potential interference should be made in the red and the green portions of the optical spectrum as follows:

1. Make sure that auto-calibration has been performed on the instrument and the mode switch is in the “Operate” position. (The display should read “00%00%00%.00 inches.”)

2. Place the sample switch in the “Paper” position. Position the mailpiece in the mail slot of the instrument so that the paper background is centered within the reticle pattern on the view screen. Place the sample switch in the “Hold” position. The unit locks the last value displayed into its internal memory and uses this value for all future PRD and PCR calculations. This value is also locked into the display readout.

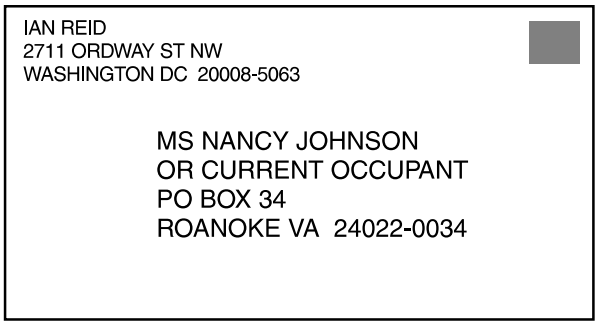
3. Place the sample switch in the “Ink” position and move the mailpiece in the mail slot so that a portion of the character is centered within the reticle pattern on the view screen. Place the same switch in the “Hold” position. This value is locked into the unit’s internal memory for all future PRD and PCR calculations. This value is also locked into the display readout.

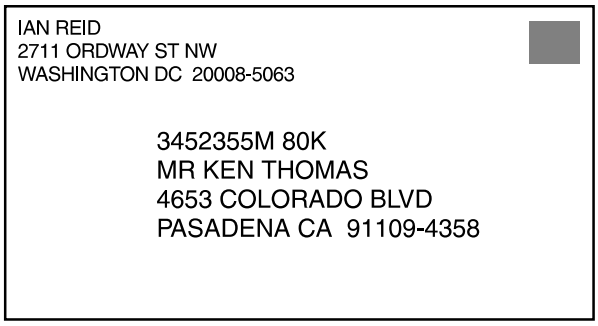
4. With the sample switch in the “Hold” position, all reflectance parameters are held on the display. By toggling the channel switch, the operator can obtain the corresponding values for the red spectrum channel.

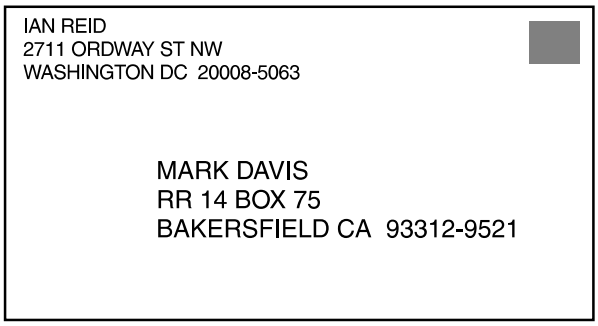
POSTNET Code and FIM Measurements

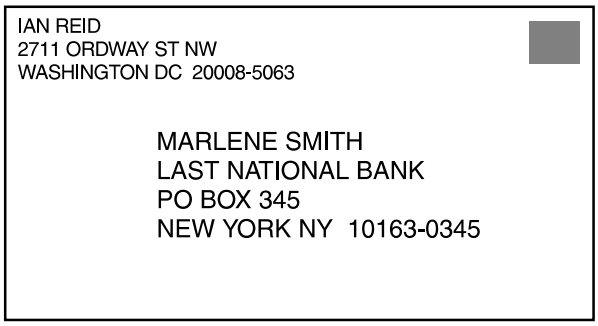
Reflectance and reflectance difference measurements on POSTNET and FIM bars, and on potential interference, should be made in the green and the red portions of the optical spectrum. The same procedures that apply to address block measurements apply to measuring POSTNET codes and FIMs with the exception that the readings are being taken with the channel switch in the “Red” position.

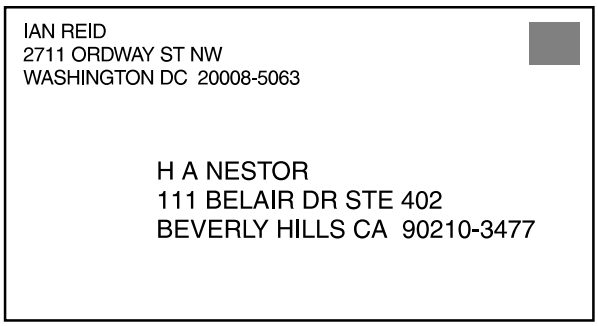
C Sample Address Formats

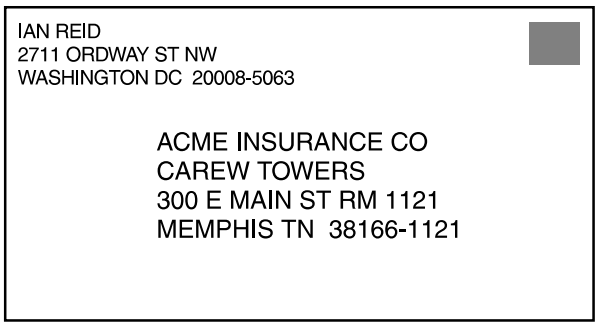


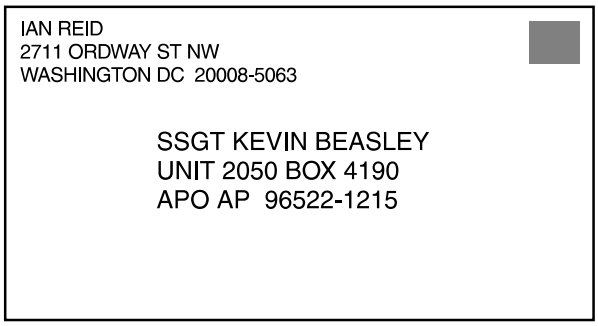












D Standard Address Abbreviations

States and Possessions

Alabama	AL
Alaska	AK
American Samoa	AS
Arizona	AZ
Arkansas	AR
California	CA
Colorado	CO
Connecticut	CT
Delaware	DE
District of Columbia	DC
Federated States of Micronesia	FM
Florida	FL
Georgia	GA
Guam	GU
Hawaii	HI
Idaho	ID
Illinois	IL
Indiana	IN
Iowa	IA
Kansas	KS
Kentucky	KY
Louisiana	LA
Maine	ME
Marshall Islands	MH
Maryland	MD
Massachusetts	MA
Michigan	MI
Minnesota	MN
Mississippi	MS
Missouri	MO
Montana	MT
Nebraska	NE
Nevada	NV
New Hampshire	NH
New Jersey	NJ
New Mexico	NM
New York	NY
North Carolina	NC
North Dakota	ND
Northern Mariana Islands	MP
Ohio	OH
Oklahoma	OK
Oregon	OR
Palau	PW
Pennsylvania	PA
Puerto Rico	PR
Rhode Island	RI
South Carolina	SC
South Dakota	SD
Tennessee	TN
Texas	TX
Utah	UT
Vermont	VT
Virginia	VA
Virgin Islands	VI
Washington	WA
West Virginia	WV
Wisconsin	WI
Wyoming	WY

Directionals

North	N
East	E
South	S
West	W
Northeast	NE
Southeast	SE
Northwest	NW
Southwest	SW

Secondary Address Unit Indicators

Apartment	APT
Building	BLDG
Floor	FL
Suite	STE
Room	RM
Department	DEPT

Street Designators (Suffixes)

Alley	ALY
Annex	ANX
Arcade	ARC
Avenue	AVE
Bayou	BYU
Beach	BCH
Bend	BND
Bluff	BLF
Bottom	BTM
Boulevard	BLVD
Branch	BR
Bridge	BRG
Brook	BRK
Burg	BG
Bypass	BYP
Camp	CP
Canyon	CYN
Cape	CPE
Causeway	CSWY
Center	CTR
Circle	CIR
Cliffs	CLFS
Club	CLB
Corner	COR
Corners	CORS
Course	CRSE
Court	CT
Courts	CTS
Cove	CV
Creek	CRK
Crescent	CRES
Crossing	XING
Dale	DL
Dam	DM
Divide	DV
Drive	DR
Estates	EST
Expressway	EXPY
Extension	EXT
Fall	FALL
Falls	FLS
Ferry	FRY
Field	FLD
Fields	FLDS
Flats	FLT
Ford	FRD
Forest	FRST
Forge	FRG
Fork	FRK
Forks	FRKS
Fort	FT
Freeway	FWY
Gardens	GDNS
Gateway	GTWY
Glen	GLN
Green	GRN
Grove	GRV
Harbor	HBR
Haven	HVN
Heights	HTS
Highway	HWY
Hill	HL
Hills	HLS
Hollow	HOLW
Inlet	INLT
Island	IS
Islands	ISS
Isle	ISLE
Junction	JCT
Key	KY
Knolls	KNLS
Lake	LK
Lakes	LKS
Landing	LNDG
Lane	LN
Light	LGT
Loaf	LF
Locks	LCKS
Lodge	LDG
Loop	LOOP
Mall	MALL
Manor	MNR
Meadows	MDWS
Mill	ML

Mills	MLS
Mission	MSN
Mount	MT
Mountain	MTN
Neck	NCK
Orchard	ORCH
Oval	OVAL
Park	PARK
Parkway	PKY
Pass	PASS
Path	PATH
Pike	PIKE
Pines	PNES
Place	PL
Plain	PLN
Plains	PLNS
Plaza	PLZ
Point	PT
Port	PRT
Prairie	PR
Radial	RADL
Ranch	RNCH
Rapids	RPDS
Rest	RST
Ridge	RDG
River	RIV
Road	RD
Row	ROW
Run	RUN
Shoal	SHL
Shoals	SHLS
Shore	SHR
Shores	SHRS
Spring	SPG
Springs	SPGS
Spur	SPUR
Square	SQ
Station	STA
Stravenue	STRA
Stream	STRM
Street	ST
Summit	SMT
Terrace	TER
Trace	TRCE
Track	TRAK
Trail	TRL
Trailer	TRLR
Tunnel	TUNL
Turnpike	TPKE
Union	UN
Valley	VLY
Viaduct	VIA
View	VW
Village	VLG
Ville	VL
Vista	VIS
Walk	WALK
Way	WAY
Wells	WLS

E Checklists

OCR Readability

- ❑ **mailpiece material —** envelopes: minimum, 16-pound paper; cards (such as reply cards, postcards): minimum, 75-pound offset paper.
- ❑ **mailpiece color (includes inserts showing through windows) —** preferably white. If colored, reflectance of at least 50 percent in the red portion and 45 percent in the green portion of the optical spectrum.
- ❑ **mailpiece dimensions —** minimum: 3 1/2" (3.500") high, 5" long, 0.007" thick; maximum: 6 1/8" (6.125") high, 11 1/2" (11.500") long, 1/4" (0.250") thick.
- ❑ **address block location —** 1/2" (0.500") vertical clear space (margin) from left and right edges of envelope; at least 5/8" (0.625") but no more than 2 3/4" (2.750") horizontal clear space from bottom edge of envelope.
- ❑ **address format —** uniform left margin, all caps (all uppercase characters), two-letter state abbreviation, ZIP Code or ZIP+4.
- ❑ **address font style —** uniform stroke widths, simple sans serif style.
- ❑ **address character height —** 8 to 18 points (80 to 200 mils).
- ❑ **address character stroke width —** 3/4 to 2 points (10 to 30 mils).
- ❑ **address character spacing —** 3/4 to 3 points (10 to 40 mils) between characters.
- ❑ **address word spacing —** 1 to 5 em spaces (1 to 5 full-size character spaces) between words.
- ❑ **address line spacing —** 2 points to 2 em spaces (28 mils to 2 full-size character heights) between lines.
- ❑ **address skew —** maximum 5 degrees.
- ❑ **mailpiece clear zones —** OCR read area free of return address with logos and other extraneous printing above delivery address line. POSTNET clear zone free of all printing and patterns except barcode. FIM clear zone free of all printing except FIM.
- ❑ **window-edge clearance —** through full range of insert shift 1/8" (0.125").
- ❑ **print contrast ratio —** 40 percent minimum in the red and the green portions of the optical spectrum; 45 percent if glassine windows used.
- ❑ **print quality —** sharp, uniform contrast; no voids, extraneous ink, or smudges.

- ❑ **ink color —** black or dark color.
- ❑ **background interference —** underlines, halftone backgrounds, nonaddress printing avoided.

Barcodes

- ❑ **barcode locations —** lower right: no more than $^{5}/_{8}$" (0.625") from bottom edge of envelope and no more than 4 $^{3}/_{4}$" (4.750") from lower right edge of envelope; address block: above receipient line or below the city, state, and ZIP Code line of address.
- ❑ **window-edge clearance —** through full range of insert shift, barcodes must maintain $^{1}/_{8}$" (0.125") clear space on left and right sides and $^{1}/_{25}$" (0.040") clear space above and below.
- ❑ **bar size —** full bar: 0.125" (±0.010") high; half bar: 0.050" (±0.010") high; both bars: 0.020" (±0.005") wide.
- ❑ **bar pitch —** 22 bars per inch (±2 bars).
- ❑ **bar tilt —** 5 degrees maximum.
- ❑ **print reflectance difference —** 30 percent minimum in the red portion of the optical spectrum.
- ❑ **ink color —** black or dark color.
- ❑ **print quality —** sharp, uniform contrast; no voids, extraneous ink, or smudges.

FIMs

- ❑ **proper type —** FIM A for courtesy reply mail; FIM C for prebarcoded business reply mail.
- ❑ **location and clear zone —** top right of envelope with bars printed in space within $^{1}/_{8}$" (0.125") to $^{5}/_{8}$" (0.625") from top of envelope, with the leftmost bar no more than 3" from right edge of envelope.
- ❑ **dimensions, pitch, and tilt —** $^{5}/_{8}$" (0.625") ±$^{1}/_{8}$" (±0.125") long; $^{1}/_{32}$" (0.03125") ±$^{1}/_{128}$" (±0.008") wide; no more than 5 degrees combined positional and rotational skew.
- ❑ **print reflectance difference —** 30 percent minimum in the red portion of the optical spectrum.
- ❑ **ink color —** black or dark color.
- ❑ **print quality —** sharp, uniform contrast; no voids, extraneous ink, or smudges.

F Glossary

APO — Army/Air Force post office.

aspect ratio — the dimension of a mailpiece expressed as a ratio of height to length.

barcode — a series of vertical full bars and half bars representing ZIP Code information relative to the address on the mailpiece.

barcode read area — the clear zone on the lower right corner of an envelope that must be kept free of printing and symbols except for the barcode itself.

barcode sorter (BCS) — a computer-controlled machine that sorts letters, based on an imprinted barcode on the letters, at speeds of 32,000 pieces an hour.

basis weight — the weight in pounds of a ream (500 sheets) of paper cut to a specified standard size for that grade.

business reply mail (BRM) — specially printed cards, envelopes, cartons, and labels that may be mailed without prepayment of postage. The postage and fees are collected when the mail is delivered back to the sender. This service enables mailers to receive First-Class Mail, without postage, back from customers by paying the postage and fees on receipt of the mailpieces.

Business Reply Mail Accounting System (BRMAS) — an automated method for sorting, counting, and rating business reply mail (BRM) for authorized mailers.

courtesy reply mail (CRM) — a preprinted return envelope or card provided as a courtesy to customers. Customers responding to the original mailing pay the return postage.

delivery barcode sorter (DBCS) — a small, multilevel, high-speed barcode sorter that finalizes letter mail sortation to the carrier sector/segment level using a two-pass operation to sort up to 34,000 pieces an hour.

delivery point barcode (DPBC) — a ZIP+4 barcode containing two additional digits (represented by 10 additional bars) that designate a specific delivery point.

***Domestic Mail Manual* (DMM) —** the Postal Service manual containing most regulations for domestic mail services.

em space — a unit of measure exactly as wide as the point size of the type being set. In 12-point type, the em space is 12 points wide.

em height — a unit of measure exactly as high as the point size of the type being set. In 12-point type, the em height is 12 points high.

facing identification mark (FIM) — a pattern of vertical bars printed in the upper right portion of the mailpiece just to the left of the indicia, used to identify business reply mail and certain other barcoded mail. The FIM is an orientation mark for automated facing and canceling equipment.

font — a complete assortment of letters, numbers, punctuation marks, etc., of a specific size and type style.

FPO — fleet post office (Navy and Marine Corps).

halftone — the reproduction of continuous-tone artwork, such as a photograph, through a crossline or contact screen, which converts the image into dots of various sizes for printing.

indicia — (plural of indicium) the imprinted designations used on mailpieces denoting method of postage payment.

insert — a letter or other item placed in an envelope for mailing.

***International Mail Manual* (IMM) —** the Postal Service manual containing most regulations for international mail services.

kerning — reducing space between characters. Negative letter spacing.

mail processing barcode sorter (MPBCS) — a machine that sorts between 32,000 and 37,000 letter mailpieces an hour according to barcodes previously applied to the mailpieces.

mil — a unit of measure equal to 0.001 inch.

multiline optical character reader (MLOCR) — a machine that scans (“reads”) an entire address block on mail, translates the address into a corresponding barcode, sprays the barcode onto the mail, then sorts the mail to an appropriate stacker with a throughput of 30,000 to 37,000 pieces an hour, depending on the type of mail.

nanometer (nm) — a unit of wavelength (when applied to light) of 10^{-9} meters (1 billionth of a meter).

optical character reader (OCR) — a piece of computer-controlled automated equipment that locates, reads, and interprets address information (contained on the face of a mailpiece), sprays a barcode, and sorts the mailpiece into a stacker.

pitch — the center-to-center spacing between two adjacent objects such as characters in a line of characters, bars in a barcode, or lines in an address block.

point — a typographical unit of measure equal to approximately $^{1}/_{72}$" (0.0138").

POSTNET — (POSTal Numeric Encoding Technique) the barcode used to encode ZIP Code information on letter and flat mail.

print contrast ratio (PCR) — the print reflectance difference divided by background reflectance and expressed as a percentage.

print reflectance difference (PRD) — the background reflectance minus print reflectance and expressed as a percentage.

proportional spacing — the spacing of characters in a line where the space occupied by a character is proportional to the width of that character, as opposed to fixed spacing where every character occupies the same amount of space regardless of its actual width.

Remote Bar Coding System (RBCS) — a system that uses image data of handwritten mail that cannot be read by a MLOCR and incorporates automated address recognition and operator intervention to determine appropriate barcode.

serif — the short crosslines at the ends of the main strokes of letters in certain type styles.

skew — the misalignment or slant of a character, bar, line of characters, or barcode with respect to the bottom or top edge of the mailpiece.

stroke — the line or lines forming a character such as the stem or the top of a "T."

wide area barcode reader (WABCR) — a modification to the mail processing barcode sorter that permits the machine to find and "read" a barcode virtually anywhere on a mailpiece.

ZIP+4 — a nine-digit numeric code incorporating the original five-digit ZIP Code, a hyphen, and four additional digits. The first five digits identify the delivery office. The four-digit add-on identifies a specific delivery segment such as a city block face, a floor of a building, a department within a firm, or a group of post office boxes.

G Decimal Equivalents

Eighths (1/8ths)

1/8	=	0.125
2/8 (1/4)	=	0.250
3/8	=	0.375
4/8 (1/2)	=	0.500
5/8	=	0.625
6/8 (3/4)	=	0.750
7/8	=	0.875

Sixteenths (1/16ths)

1/16	=	0.0625
3/16	=	0.1875
5/16	=	0.3125
7/16	=	0.4375
9/16	=	0.5625
11/16	=	0.6875
13/16	=	0.8125
15/16	=	0.9375

Twenty-Fifths (1/25ths)

1/25	=	0.040
2/25	=	0.080
3/25	=	0.120
4/25	=	0.160
5/25	=	0.200
6/25	=	0.240
7/25	=	0.280
8/25	=	0.320
9/25	=	0.360
10/25	=	0.400
11/25	=	0.440
12/25	=	0.480
13/25	=	0.520
14/25	=	0.560
15/25	=	0.600
16/25	=	0.640
17/25	=	0.680
18/25	=	0.720
19/25	=	0.760
20/25	=	0.800
21/25	=	0.840
22/25	=	0.880
23/25	=	0.920
24/25	=	0.960

Thirty-Seconds (1/32ths)

1/32	=	0.03125
3/32	=	0.09375
5/32	=	0.15625
7/32	=	0.21875
9/32	=	0.28125
11/32	=	0.34375
13/32	=	0.40625
15/32	=	0.46875
17/32	=	0.53125
19/32	=	0.59375
21/32	=	0.65625
23/32	=	0.71875
25/32	=	0.78125
27/32	=	0.84375
29/32	=	0.90625
31/32	=	0.96875

H Postal Business Centers

Alabama

POSTAL BUSINESS CENTER
351 24TH ST N
BIRMINGHAM AL 35203-9691
(205) 323-6510 / Fax: (205) 521-0046
ZIPs served: 350-368

Alaska

POSTAL BUSINESS CENTER
3201 C ST STE 505
ANCHORAGE AK 99503-3934
(907) 564-2823 / Fax: (907) 564-2882
ZIPs served: 995-999

Arizona

POSTAL BUSINESS CENTER
4949 E VAN BUREN ST RM 8
PHOENIX AZ 85026-9605
(602) 225-5454 / Fax: (602) 225-5432
ZIPs served: 850, 852, 853, 855-857, 859, 860, 863, 864

Arkansas

POSTAL BUSINESS CENTER
420 NATURAL RESOURCES DR
LITTLE ROCK AR 72205-9996
(501) 228-4300 / Fax: (501) 228-4299
ZIPs served: 716-729

California

POSTAL BUSINESS CENTER
2300 REDONDO AVE
LONG BEACH CA 90809-9694
(310) 494-2301 / Fax: (310) 498-7506
ZIPs served: 902-908

POSTAL BUSINESS CENTER
7001 S CENTRAL AVE RM 264
LOS ANGELES CA 90052-9602
(213) 586-1843 / Fax: (213) 586-1831
ZIP served: 900

POSTAL BUSINESS CENTER
1675 7TH ST RM 120
OAKLAND CA 94615-9641
(510) 874-8600 / Fax: (510) 832-4024
ZIPs served: 945-948

POSTAL BUSINESS CENTER
2035 HURLEY WAY STE 200
SACRAMENTO CA 95825-3209
(916) 923-4357 / Fax: (916) 923-4381
ZIPs served: 942, 952, 953, 956-960

POSTAL BUSINESS CENTER
11251 RANCHO CARMEL DR RM 266
SAN DIEGO CA 92199-9606
(619) 674-0400 / Fax: (619) 674-0055
ZIPs served: 919-925

POSTAL BUSINESS CENTER
PO BOX 7821
SAN FRANCISCO CA 94120-7821
(415) 536-6565 / Fax: (415) 536-6450
ZIPs served: 940, 941, 943, 944, 949, 954, 955, 962-966

POSTAL BUSINESS CENTER
PO BOX 50014
SAN JOSE CA 95150-0014
(408) 723-6262 / Fax: (408) 723-6272
ZIPs served: 932, 933, 936-939, 950, 951

POSTAL BUSINESS CENTER
3101 W SUNFLOWER AVE
SANTA ANA CA 92799-9323
(714) 662-6213 / Fax: (714) 556-1492
ZIPs served: 917, 918, 926-928

POSTAL BUSINESS CENTER
28201 FRANKLIN PKY
SANTA CLARITA CA 91383-9680
(805) 294-6910 / Fax: (805) 294-7186
ZIPs served: 910-916, 930, 931, 934, 935

Colorado

POSTAL BUSINESS CENTER
1745 STOUT ST STE 101
DENVER CO 80266-9617
(303) 297-6118 / Fax: (303) 391-5076
ZIPs served: 800-816, 820-831

Connecticut

POSTAL BUSINESS CENTER
141 WESTON ST
HARTFORD CT 06101-9631
(203) 524-6494 / Fax: (203) 524-6446
ZIPs served: 060-069

Delaware (see New Jersey)

District of Columbia

POSTAL BUSINESS CENTER
8455 COLESVILLE RD STE 950
SILVER SPRING MD 20910-3319
(301) 565-2177 / Fax: (301) 565-2933
ZIPs served: 200, 202-209

Florida

POSTAL BUSINESS CENTER
1900 W OAKLAND PARK BLVD RM 211
FORT LAUDERDALE FL 33310-9600
(305) 527-6981 / Fax: (305) 527-6985
ZIP served: 333

POSTAL BUSINESS CENTER
11250 PHILLIPS INDUSTRIAL BLVD E
JACKSONVILLE FL 32256-3000
(904) 260-8101 / Fax: (904) 260-9015
ZIPs served: 320-326, 344

POSTAL BUSINESS CENTER
2200 NW 72ND AVE RM 528
MIAMI FL 33152-9600
(305) 470-0803 / Fax: (305) 470-0799
ZIPs served: 330-332, 340

POSTAL BUSINESS CENTER
10401 TRADEPORT DR
ORLANDO FL 32862-8901
(407) 826-5602 / Fax: (407) 826-5679
ZIPs served: 327-329, 347

POSTAL BUSINESS CENTER
4107 N HIMES AVE STE 203
TAMPA FL 33607-6600
(813) 871-6245 / Fax: (813) 871-2021
ZIPs served: 335-339, 342, 346

POSTAL BUSINESS CENTER
3200 SUMMIT BLVD RM 111
W PALM BEACH FL 33406-9602
(407) 697-2180 / Fax: (407) 697-2125
ZIPs served: 334, 349

Georgia

POSTAL BUSINESS CENTER
PO BOX 20777
MACON GA 31205-0777
(912) 784-3917 / Fax: (912) 784-3916
ZIPs served: 310, 312, 316-319

POSTAL BUSINESS CENTER
PO BOX 599332
NORTH METRO GA 30159-9332
(404) 717-3440 / Fax: (404) 717-3629
ZIPs served: 300-303, 305, 306, 311

POSTAL BUSINESS CENTER
2 N FAHM ST
SAVANNAH GA 31402-9600
(912) 235-4591 / Fax: (912) 234-9335
ZIPs served: 298, 299, 304, 308, 309, 313-315

Hawaii

POSTAL BUSINESS CENTER
3600 AOLELE ST RM 106
HONOLULU HI 96820-9623
(808) 423-3761 / Fax: (808) 423-3966
ZIPs served: 967-969

Idaho (see Washington)

Illinois

POSTAL BUSINESS CENTER
3900 GABRIELLE DR
AURORA IL 60599-9601
(708) 978-4455 / Fax: (708) 978-4354
ZIPs served: 604, 605, 609, 613-619, 625-627

POSTAL BUSINESS CENTER
500 E FULLERTON AVE
CAROL STREAM IL 60199-9661
(708) 260-5511 / Fax: (708) 260-5524
ZIPs served: 600-603, 610, 611

POSTAL BUSINESS CENTER
433 W VAN BUREN ST RM 108
CHICAGO IL 60607-9601
(312) 765-4215 / Fax: (312) 765-3984
ZIPs served: 606, 607

Indiana

POSTAL BUSINESS CENTER
125 W SOUTH ST
INDIANAPOLIS IN 46206-9661
(317) 464-6010 / Fax: (317) 464-6266
ZIPs served: 460-469, 472-475, 478, 479

Iowa

POSTAL BUSINESS CENTER
PO BOX 189996
DES MOINES IA 50318-9605
(515) 251-2336 / Fax: (515) 251-2052
ZIPs served: 500-514, 520-528, 612

Kansas (see Nebraska)

Kentucky

POSTAL BUSINESS CENTER
PO BOX 31660
LOUISVILLE KY 40231-9660
(502) 473-4200 / Fax: (502) 454-1744
ZIPs served: 400-418, 420-427, 471, 476, 477

Louisiana

POSTAL BUSINESS CENTER
701 LOYOLA AVE RM 1103
NEW ORLEANS LA 70113-9680
(504) 589-1366 / Fax: (504) 589-1328
ZIPs served: 700, 701, 703-708, 710-714

Maine

POSTAL BUSINESS CENTER
125 FOREST AVE
PORTLAND ME 04101-9600
(207) 871-8567 / Fax: (207) 871-8401
ZIPs served: 039-049

Maryland

POSTAL BUSINESS CENTER
900 E FAYETTE ST RM 502
BALTIMORE MD 21233-9661
(410) 347-4358 / Fax: (410) 347-4515
ZIPs served: 210-212, 214-219

Massachusetts

POSTAL BUSINESS CENTER
25 DORCHESTER AVE RM 1000
BOSTON MA 02205-9602
(617) 654-5725 / Fax: (617) 654-5829
ZIPs served: 021, 022

POSTAL BUSINESS CENTER
1883 MAIN ST
SPRINGFIELD MA 01101-9600
(413) 731-0306 / Fax: (413) 731-0330
ZIPs served: 010-013, 050-059

POSTAL BUSINESS CENTER
PO BOX 2236
WOBURN MA 01888-0336
(617) 938-1450 / Fax: (617) 938-5827
ZIPs served: 018, 019, 01730, 01741, 01742

POSTAL BUSINESS CENTER
4 EAST CENTRAL ST
WORCESTER MA 01613-9602
(508) 795-3608 / Fax: (508) 795-3660
ZIPs served: 014-017

Michigan

POSTAL BUSINESS CENTER
PO BOX 9630
BIRMINGHAM MI 48009-9630
(810) 546-1321 / Fax: (810) 901-4515
ZIPs served: 480, 483

POSTAL BUSINESS CENTER
1927 ROSA PARKS BLVD
DETROIT MI 48216-9620
(313) 226-8600 / Fax: (313) 225-5496
ZIPs served: 481, 482

POSTAL BUSINESS CENTER
PO BOX 999661
GRAND RAPIDS MI 49599-9661
(616) 776-6161 / Fax: (616) 458-5830
ZIPs served: 484-497

Minnesota

POSTAL BUSINESS CENTER
100 S FIRST ST RM 119
MINNEAPOLIS MN 55401-9617
(612) 349-6360 / Fax: (612) 349-4410
ZIPs served: 540, 546-548, 550, 551, 553-564, 566

Mississippi

POSTAL BUSINESS CENTER
401 E SOUTH ST STE 100
JACKSON MS 39201-9825
(601) 360-2700 / Fax: (601) 360-2707
ZIPs served: 369, 386-397

Missouri

POSTAL BUSINESS CENTER
315 W PERSHING RD RM 104
KANSAS CITY MO 64108-9623
(816) 374-9613 / Fax: (816) 374-9192
ZIPs served: 636-641, 644-649, 654-658, 660-662, 667

POSTAL BUSINESS CENTER
2665 SCOTT AVE
ST LOUIS MO 63103-3048
(314) 534-2678 / Fax: (314) 534-4763
ZIPs served: 620, 622-624, 628-631, 633-635, 650-653

Montana

POSTAL BUSINESS CENTER
550 S 24TH ST W
BILLINGS MT 59102-6293
(406) 255-6432 / Fax: (406) 255-6433
ZIPs served: 590-595, 59715

POSTAL BUSINESS CENTER
1100 W KENT AVE
MISSOULA MT 59801-9625
(406) 329-2231 / Fax: (406) 329-2280
ZIPs served: 596-599

Nebraska

POSTAL BUSINESS CENTER
5303 N 91ST AVE
OMAHA NE 68134-9600
(402) 573-2100 / Fax: (402) 573-2131
ZIPs served: 515, 516, 664-666, 668-681, 683-693

Nevada

POSTAL BUSINESS CENTER
1001 E SUNSET RD RM 106
LAS VEGAS NV 89199-9605
(702) 361-9318 / Fax: (702) 361-9213
ZIPs served: 889-891, 893-895, 897, 898, 961

New Hampshire

POSTAL BUSINESS CENTER
955 GOFFS FALLS RD
MANCHESTER NH 03103-9671
(603) 644-3838 / Fax: (603) 644-3865
ZIPs served: 030-038

New Jersey

POSTAL BUSINESS CENTER
PO BOX 9001
BELLMAWR NJ 08099-9601
(609) 933-6000 / Fax: (609) 933-6006
ZIPs served: 080-084, 197-199

POSTAL BUSINESS CENTER
21 KILMER RD
EDISON NJ 08899-9610
(908) 777-0565 / Fax: (908) 777-0513
ZIPs served: 077-079, 085-089

POSTAL BUSINESS CENTER
100 EXECUTIVE DR STE 390
WEST ORANGE NJ 07052-9333
(201) 731-4866 / Fax: (201) 669-0489
ZIPs served: 070-076

New Mexico

POSTAL BUSINESS CENTER
1135 BROADWAY BLVD NE RM 108
ALBUQUERQUE NM 87101-9601
(505) 245-9480 / Fax: (505) 245-9804
ZIPs served: 865, 870-875, 877-884

New York

POSTAL BUSINESS CENTER
1770 CENTRAL AVE
ALBANY NY 12205-4753
(518) 869-6526 / Fax: (518) 869-3925
ZIPs served: 120-123, 128-139

POSTAL BUSINESS CENTER
1200 WILLIAM ST RM 100
BUFFALO NY 14240-9661
(716) 846-2581 / Fax: (716) 846-2586
ZIPs served: 140-143, 147

POSTAL BUSINESS CENTER
500 N SAW MILL RIVER RD
ELMSFORD NY 10523-9650
(914) 345-1237 / Fax: (914) 345-3451
ZIPs served: 105-109, 124-127

POSTAL BUSINESS CENTER
142-02 20TH AVE RM 123B
FLUSHING NY 11351-9621
(718) 321-5700 / Fax: (718) 358-9196
ZIPs served: 103, 110-114, 116

POSTAL BUSINESS CENTER
PO BOX 7609
HAUPPAUGE NY 11760-9661
(516) 582-7600 / Fax: (516) 582-7596
ZIPs served: 115, 117-119

POSTAL BUSINESS CENTER
421 8TH AVE RM 4202H
NEW YORK NY 10199-9619
(212) 330-3809 / Fax: (212) 330-3234
ZIPs served: 100-102, 104

POSTAL BUSINESS CENTER
PO BOX 22908
ROCHESTER NY 14692-2908
(716) 272-7220 / Fax: (716) 272-5979
ZIPs served: 144-146, 148, 149

North Carolina

POSTAL BUSINESS CENTER
2901 S INTERSTATE 85 SERVICE RD
CHARLOTTE NC 28228-9975
(704) 393-4481 / Fax: (704) 393-4661
ZIPs served: 280-285, 287-289, 297

POSTAL BUSINESS CENTER
PO BOX 27499
GREENSBORO NC 27498-9661
(910) 665-9740 / Fax: (910) 665-9748
ZIPs served: 270-279, 286

North Dakota (see South Dakota)

Ohio

POSTAL BUSINESS CENTER
675 WOLF LEDGES PKY
AKRON OH 44309-9600
(216) 996-9721 / Fax: (216) 996-9948
ZIPs served: 434-436, 439, 442-449

POSTAL BUSINESS CENTER
990 DALTON AVE
CINCINNATI OH 45203-9601
(513) 723-9900 / Fax: (513) 684-5082
ZIPs served: 410, 450-455, 458, 470

POSTAL BUSINESS CENTER
2400 ORANGE AVE RM 23
CLEVELAND OH 44101-9604
(216) 443-4401 / Fax: (216) 443-4587
ZIPs served: 440, 441

POSTAL BUSINESS CENTER
850 TWIN RIVERS DR
COLUMBUS OH 43216-9601
(614) 469-4336 / Fax: (614) 469-4417
ZIPs served: 430-433, 437, 438, 456, 457

Oklahoma

POSTAL BUSINESS CENTER
7101 NW EXPRESSWAY ST STE 325
OKLAHOMA CITY OK 73132-1598
(405) 720-2675 / Fax: (405) 720-7120
ZIPs served: 730, 731, 734-741, 743-749

Oregon

POSTAL BUSINESS CENTER
PO BOX 4029
PORTLAND OR 97208-4029
(503) 294-2306 / Fax: (503) 294-2304
ZIPs served: 970-979, 986

Pennsylvania

POSTAL BUSINESS CENTER
1314 GRISWOLD PLZ
ERIE PA 16501-9631
(814) 878-0018 / Fax: (814) 878-0010
ZIPs served: 155, 157-168

POSTAL BUSINESS CENTER
1425 CROOKED HILL RD
HARRISBURG PA 17107-9601
(717) 257-2108 / Fax: (717) 257-2101
ZIPs served: 169-172, 177, 178, 180-188

POSTAL BUSINESS CENTER
1400 HARRISBURG PIKE
LANCASTER PA 17604-9601
(717) 396-6969 / Fax: (717) 396-7031
ZIPs served: 173-176, 179, 195, 196

POSTAL BUSINESS CENTER
PO BOX 13416
PHILADELPHIA PA 19101-3416
(215) 895-8046 / Fax: (215) 895-8041
ZIPs served: 190-192

POSTAL BUSINESS CENTER
1001 CALIFORNIA AVE RM 1007
PITTSBURGH PA 15290-9652
(412) 359-7601 / Fax: (412) 321-1953
ZIPs served: 150-154, 156, 260

POSTAL BUSINESS CENTER
1000 W VALLEY RD
SOUTHEASTERN PA 19399-9604
(610) 964-6441 / Fax: (610) 964-5414
ZIPs served: 189, 193, 194

Puerto Rico

POSTAL BUSINESS CENTER
585 FD ROOSEVELT AVE STE 216
SAN JUAN PR 00936-9623
(809) 782-3929 / Fax: (809) 273-1025
ZIPs served: 006-009

Rhode Island

POSTAL BUSINESS CENTER
24 CORLISS ST RM 355
PROVIDENCE RI 02904-9602
(401) 276-5038 / Fax: (401) 276-5089
ZIPs served: 020, 023-029

South Carolina

POSTAL BUSINESS CENTER
PO BOX 929641
COLUMBIA SC 29292-9641
(803) 926-6200 / Fax: (803) 926-6326
ZIPs served: 290-296

South Dakota

POSTAL BUSINESS CENTER
320 S 2ND AVE
SIOUX FALLS SD 57102-7574
(605) 357-5049 / Fax: (605) 357-5045
ZIPs served: 565, 567, 570-577, 580-588

Tennessee

POSTAL BUSINESS CENTER
PO BOX 3463
MEMPHIS TN 38173-0463
(901) 576-2035 / Fax: (901) 576-2039
ZIPs served: 380-383

POSTAL BUSINESS CENTER
525 ROYAL PKY RM 327
NASHVILLE TN 37229-9601
(615) 885-9399 / Fax: (615) 885-9214
ZIPs served: 307, 370-374, 376-379, 384, 385

Texas

POSTAL BUSINESS CENTER
951 W BETHEL RD
COPPELL TX 75099-9681
(214) 393-6701 / Fax: (214) 393-6664
ZIPs served: 750-759

POSTAL BUSINESS CENTER
4600 MARK IV PKY STE 260K
FORT WORTH TX 76161-9681
(817) 625-3600 / Fax: (817) 625-3304
ZIPs served: 739, 760-764, 768, 769, 790-796

POSTAL BUSINESS CENTER
PO BOX 250001
HOUSTON TX 77202-9610
(713) 226-3349 / Fax: (713) 226-3155
ZIPs served: 770-778

POSTAL BUSINESS CENTER
4600 ALDINE BENDER RD RM 227
HOUSTON TX 77315-9610
(713) 985-4108 / Fax: (713) 985-4194
ZIPs served: 770-778

POSTAL BUSINESS CENTER
10410 PERRIN BEITEL RD STE 1069
SAN ANTONIO TX 78284-9623
(210) 657-8578 / Fax: (210) 657-8463
ZIPs served: 733, 765-767, 779-789, 797-799

Utah

POSTAL BUSINESS CENTER
1760 W 2100 S
SALT LAKE CITY UT 84199-9625
(801) 974-2503 / Fax: (801) 975-7886
ZIPs served: 840, 841, 843-847

Vermont (see Massachusetts)

Virginia

POSTAL BUSINESS CENTER
8409 LEE HWY
MERRIFIELD VA 22081-9621
(703) 207-6800 / Fax: (703) 207-6825
ZIPs served: 201, 220-223, 226, 227

POSTAL BUSINESS CENTER
1801 BROOK RD RM 303
RICHMOND VA 23232-9610
(804) 775-6224 / Fax: (804) 775-6287
ZIPs served: 224, 225, 228-239, 244

Washington

POSTAL BUSINESS CENTER
PO BOX 24000
SEATTLE WA 98124-4000
(206) 625-7016 / Fax: (206) 467-9019
ZIPs served: 980-985, 988, 989

POSTAL BUSINESS CENTER
707 W MAIN AVE STE 600
SPOKANE WA 99299-9641
(509) 626-6733 / Fax: (509) 626-6918
ZIPs served: 832-838, 990-994

West Virginia

POSTAL BUSINESS CENTER
PO BOX 59661
CHARLESTON WV 25350-9661
(304) 340-4233 / Fax: (304) 340-2890
ZIPs served: 240-243, 245-259, 261-268

Wisconsin

POSTAL BUSINESS CENTER
PO BOX 14750
MADISON WI 53714-0750
(608) 246-1245 / Fax: (608) 246-1258
ZIPs served: 535, 537-539, 549

POSTAL BUSINESS CENTER
PO BOX 5008
MILWAUKEE WI 53201-5008
(414) 287-2522 / Fax: (414) 287-2518
ZIPs served: 498, 499, 530-532, 534, 541-545

Wyoming (see Colorado)